Microsoft®

Microsoft® Digital Image 2006 Suite

Complete photo editing and organization made easy

User's Manual

Microsoft®

Digital Image Suite

User's Manual

Information in this document, including URL and other Internet Web site references, is subject to change without notice. Unless otherwise noted, the example companies, organizations, products, domain names, e-mail addresses, logos, people, places, and events depicted herein are fictitious, and no association with any real company, organization, product, domain name, e-mail address, logo, person, place, or event is intended or should be inferred. Complying with all applicable copyright laws is the responsibility of the user. Without limiting the rights under copyright, no part of this document may be reproduced, stored in or introduced into a retrieval system, or transmitted in any form or by any means (electronic, mechanical, photocopying, recording, or otherwise), or for any purpose, without the express written permission of Microsoft Corporation.

Microsoft may have patents, patent applications, trademarks, copyrights, or other intellectual property rights covering subject matter in this document. Except as expressly provided in any written license agreement from Microsoft, the furnishing of this document does not give you any license to these patents, trademarks, copyrights, or other intellectual property.

© 2005 Microsoft Corporation. All rights reserved.

Microsoft, Picture It!, and Windows are either registered trademarks or trademarks of Microsoft Corporation in the United States and/or other countries.

This product contains images from PhotoDisc/Getty Images, Inc.; Dave Johnson; Tony Chor; Eric Hansen; Tim Hedlund; Charlotte Lowrie; David Parlin; and Tom Simmons.

This software is based in part on the work of the independent JPEG Group.

GIF decompression code, copyright 1990, David Koblas.

Portions of graphic filter software used with the permission of Eastman Kodak Company. Copyright © 1996 Eastman Kodak Company.

ImageStream Graphics & Presentation Filters Copyright © 1991-1996 ImageMark Software Labs, Inc. All Rights Reserved.

Graphic filters licensed from Access Softek, Inc. Copyright © 1996 Access Softek, Inc.

This product contains Macromedia Flash™ Player software by Macromedia, Inc., Copyright © 1996-2002 Macromedia, Inc. All rights reserved. Macromedia, Flash, and the Flash Player logo are trademarks of Macromedia, Inc.

Portions of this product were created using LEADTOOLS Copyright© 1991-2002, LEAD Technologies, Inc. All rights reserved.

© 2000 Gina B. Designs, Inc., © Adjoa J. Burrowes/EthnoGraphics, © Alice Briggs Illustration, © Allport Editions, © Amberley Greeting Card Company, © Antoinette Simmons Hodges/EthnoGraphics, © Athena Hampton/EthnoGraphics, © Betty Biggs/EthnoGraphics, © Bonnie Zuponcic, © Carla Golembe/EthnoGraphics, © Cathy L. Schubert/EthnoGraphics. © Colors By Design, © Emma Raley, © Fish & Webster, © Fravessi Greetings, Inc., © Gary Craig, © Georgia Rettmer and Kimberly Rinehart, © Great Arrow Graphics, © Jay P. Morgan, © Jeanine M. Frazier/EthnoGraphics, © Jesus & Margaret Flores/EthnoGraphics, © Jim Z. Zhang/EthnoGraphics, © Joann Pecoraro/EthnoGraphics, © Joseph Polevoi/EthnoGraphics, © Karen Gutowsky, © Kay Erickson/EthnoGraphics, © Keith Henry Brown/EthnoGraphics, © Kersti Wells, © Kiki Oberstenfeld de Suarez, © KOKO New York, © Kristin Elliott, © Kristin Nelson Tinker/EthnoGraphics, © Larry LaBonte© Laura Schuman © Leeann Lidz/EthnoGraphics, © Linda G. Fisher/EthnoGraphics, © linneadesign.com, © Lisa R. Foster/EthnoGraphics, © Liz Kahlenberg Bordow, © Lorie L. Clark/EthnoGraphics, © Madison Park Greetings, © MARA-MI, © Marian Heath Greeting Cards, © Maril Delly/EthnoGraphics, © Marisela Godoy/EthnoGraphics, © Mark Downey/EthnoGraphics, © ME GRAPHICS, © Northern Exposure, © NRN Designs Corporation, © Painted Hearts & Friends, © Palm Press, Inc., © Paula Doherty 2001, Advocate-Art © Penny Laine Papers, © Pinx A Card Co., Inc., © Rebecca Pavlenko, © Red Farm Studio, © Roobee, © Sally Martin do Gastelum/EthnoGraphics, © Sandi Carpenter/EthnoGraphics, © Sara Schneidman, © Snafu Designs, © Socially Yours, © Steve Haskamp, © Steve Katz, © Suzanne Tornquist/EthnoGraphics, © Xiaoxing Yu/EthnoGraphics, Bottman Design, Inc. © Chris Roberts-Antieau, Bottman Design, Inc. © Paris Bottman, Fan Mail Greeting Card Co © Dona Rozanski, LARKSPUR GRAPHICS © Andie Thrams, Off Ramp(TM), Silk Spiral Designs © G.B., Steve Lovi © 2000, TWENTY-FOUR CARROT, INC. ® © Jennifer Blomgren, © Andrea Beloff, © Dorothy Strait, © Carmel Bartz.

The names of actual companies and products mentioned herein may be the trademarks of their respective owners.

0405 Part No. X11-13931

Contents at a Glance

Chapter 1: Installation 1
Chapter 2: Welcome to Digital Image Suite 7
Chapter 3: Opening and Importing Pictures 11
Chapter 4: Digital Image Suite Editor Basics 23
Chapter 5: Basic Touchup 37
Chapter 6: Advanced Picture Editing 51
Chapter 7: Batch Editing in the Mini Lab 77
Chapter 8: Adding Edges, Mats, and Frames 83
Chapter 9: Creating Projects 87
Chapter 10: Saving and Printing Pictures 93
Chapter 11: Organizing and Finding Pictures in Digital Image Library 105
Chapter 12: Taking Great Pictures 123
Chapter 13: Successful Scanning 163
Chapter 14: Optimizing Your Monitor for Pictures 173
Chapter 15: Digital Photography Tips & Tricks 181
Index 269

Table of Contents

Chapter 1: Installation 1
Starting Setup 3
Completing the Installation Wizard 4
Installation Folder Dialog Box 4
Installation Options Dialog Box 4
Special Circumstances 5
Upgrading from a Different Digital Image Product 5
Reinstalling or Removing Digital Image 6
Chapter 2: Welcome to Digital Image Suite 7
What You'll Find in This Book 9
Other Helpful Resources 9
Chapter 3: Opening and Importing Pictures 11
Importing Pictures 13
Launching the Import Pictures Wizard automatically 13
Starting the Import Pictures Wizard manually 14
Opening Pictures for Editing 14
Using the file browser 14
Opening pictures from other cameras 17
Troubleshooting tips for opening pictures from a camera 18
Opening pictures from a scanner 18
Opening a Photo Sent Through E-mail 20
Opening a Picture from a Web Page 21
Chapter 4: Digital Image Suite Editor Basics 23
Startup Window 25
Examining the Work Area 27
Image Formatting 29
Changing picture size 29
Applying Text 31
Help Resources 32
Online Help 32
Using the table of contents 33
Using the index 33
Using the search 34

Product Tour 34
Instructional Videos 35
Technical Support 35
Chapter 5: Basic Touchup 37
Adjusting Exposure and Lighting 39
Correcting a Color Cast 40
Fixing Red Eye 41
Straightening a Picture 42
Cropping 43
Using the rule of thirds 43
Using Smart Erase 45
Removing Spots and Blemishes 46
Removing Wrinkles 47
Adding Flash 48
Reducing Backlighting 49
Chapter 6: Advanced Picture Editing 51
Understanding Objects 53
Working with Composites 53
Locked Objects 54
Selecting Objects with the Object Tool 55
Multiple Selection, Grouping, and Flattening Objects 56
Multiple Selection 56
Grouping Objects 57
Flattening Objects 58
Automatic Flattening 58
Flattening Objects During Saving 58
Using Selection Tools 59
The Marquee Tool 60
The Freehand Tool 61
The Edge Finder 62
The Magic Wand 63
The Selection Brush 64

Editing and Copying Selected Areas 65
Copying, Cutting, and Pasting Selections 65
Filters 66
Color Effects 67
Paint Effects 68
Clone Brush 70
Blending Brush 71
Distortion Brush 72
Using the Levels and Curves Tool 73
Chapter 7: Batch Editing in the Mini Lab 77
Chapter 8: Adding Edges, Mats, and Frames 83
Edge Effects 85
Mats and Frames 86
Chapter 9: Creating Projects 87
Creating Photo Cards 89
Creating Calendars 91
Chapter 10: Saving and Printing Pictures 93
Saving Pictures 95
Saving Multiple Versions 95
Choosing a File Format 96
Setting PNG Plus Options 97
Saving for E-mail and the Web 98
Printing Pictures 99
Printing Single Pictures 99
Printing Multiple Pictures 100
Selecting Print Quality 101
Selecting a Print Size 101
Choosing Photo Paper 102
Creating Long-lasting Prints 102
Ordering Prints 103

Chapter 11: Organizing and Finding Pictures in Digital Image Library 105
Opening Digital Image Library 107
Adding Pictures and Videos toDigital Image Library 108
Scanning for Pictures and Videos 109
Adding Labels 110
Finding Your Pictures 112
Viewing by Label 112
Viewing by Folder 113
Viewing by Date 113
Using the Thumbnail Slider 114
Showing Thumbnail Data 115
Tiles View 115
Thumbnails View 115
Thumbnails with Text View 115
Grouping Your Pictures 116
Showing the Table of Contents 116
Using the Preview Pane 117
Burning Pictures to Disc 118
Archiving Pictures and Videos 119
Editing and File Management from DigitalImage Library 120
Editing Pictures 120
Editing in Mini Lab 121
Chapter 12: Taking Great Pictures 123
About Digital Cameras 126
Photo Quality 126
File Formats 130
Using Zoom Features 131
Memory Cards, Disks, and Sticks 132
Battery Life 133
Using the Flash 134
Automatic Flash 134
Red-Eye Reduction Flash 135
Fill Flash 136

Using Your Camera's Manual Settings 137
Exposure 137
Exposure Compensation 139
Aperture 140
Shutter Speed 142
ISO Setting or Equivalent 144
Setting the White Balance 145
Using Automatic Modes on Your Camera 146
Macro Mode 147
Action Mode 148
Burst Mode 150
Portrait Mode 151
Panoramic Mode 152
Using the Self-Timer 153
Getting Yourself into a Picture 153
Taking Long Exposure Shots 153
Ten Tips for Great Pictures 154
1. Know Your Gear 154
2. Nail the Exposure 155
3. Capture a Moment in the Story 156
4. Look for the Light 157
5. Follow the Rule of Thirds 158
6. Find a Unique Perspective 159
7. Bracket 160
8. Analyze and Try Again 161
9. Take Pictures Every Day 161
10. Show Your Pictures to Other People 162
Chapter 13: Successful Scanning 163
Types of Scanners 165
Flatbed Scanners 165
Film Scanners 166
Preparing Pictures for Scanning 167
Setting Resolution and Bit Depth 168

Scanning Large Pictures 169
Five Tips for Buying the Right Scanner 170
1. Get the Best Resolution You Can 170
2. Look for USB Connections 170
3. Check the Dynamic Range 170
4. Scan by the Batch 171
5. Be Realistic About Scanning Speed 171
Five Tips for Successful Scanning 172
1. Keep Your Scanner and Originals Clean 172
2. Preview and Correct the Scan 172
3. Scan at a High Resolution 172
4. Choose the TIFF Format 172
5. Convert Large TIFF Files to JPEG 172
Chapter 14: Optimizing Your Monitor for Pictures 173
Setting Screen Resolution 175
Setting Monitor Color Quality 176
Calibrating for Brightness, Contrast,and RGB Values 178
Controlling Ambient Light 179
Chapter 15: Digital Photography Tips & Tricks 181
How Photo Savvy Are You? 184
What Makes a Photo Good? 198
Photo Challenge: Tell a Story 207
Weekend Photo Ideas 211
Six Easy Ways to Improve Your Photography 215
Six Digital Photo Problems 220
Winter Camera Care Tips 228
Tips for Online Auction Photos 230
The Fast Track to Better Photos 236
Photo Ops in the Most Unusual Places 242
Fall Photos: Sharpen Your Eye for Color and Composition 247
Digital Image Editing 101 255
Index 269

CHAPTER 1

Installation

1 Installation

Starting Setup

To install Digital Image Suite 2006, you must be running Windows 98, Windows Millennium Edition, Windows 2000, or Windows XP or later. On Windows 2000 and Windows XP systems, you must have administrative privileges. For information regarding privileges, please refer to the operating system Help.

On most computers, Digital Image setup will begin automatically when you insert the Digital Image CD into your disk drive.

To begin automatic setup:

1. Turn off any antivirus software that you're using, and close any programs that are running.
2. Insert the Digital Image CD into your disk drive. The Installation Wizard begins automatically.

If the above procedure does not start the setup process, you can start it manu**ally.**

To begin setup manually:

1. Turn off any antivirus software that you're using, and close any programs that are running.
2. Insert the Digital Image CD into your disk drive.
3. Click **Start**, and then click **Run**.
4. If your CD-ROM drive is listed as letter D, type *d:\setup.exe*.
   If your CD-ROM drive has a letter other than D, replace D with the correct letter when you type the path.
5. Click **OK**.
   The Installation Wizard begins.

Completing the Installation Wizard

The Installation Wizard will show you a series of dialog boxes that provide setup status and some installation preference options. For most users, the default preferences will be appropriate. Information about the different setup options is provided below.

Installation Folder Dialog Box

The Installation Folder dialog box allows you to choose where the program will be installed on your computer. To install the program to a folder other than the folder in the Installation folder box, do one of the following:

- Type a different path in the **Installation Folder** box.
- Click **Change**, select a folder in the **Change Installation Folder** dialog box, and then click **OK**.

Note that some files will be installed to the Program Files drive even if you choose to install the program to a different drive.

Installation Options Dialog Box

The Installation Options dialog box allows you to choose between Typical installation and Full installation.

- **Typical installation** takes up less space on your hard drive, and is recommended for most users. With Typical installation, you will have to insert the Digital Image CD in your CD-ROM drive to use some of the projects and clip art while you are using the program.
- **Full installation** copies all of the Digital Image projects and clip art to your hard drive, so you will not have to reinsert a Digital Image CD while you are using the program. Look under Description for the disk space required for this option.

Special Circumstances

Upgrading from a Different Digital Image Product

If you already have a Digital Image product installed on your machine, any one of several situations may occur when you try to install another Digital Image product:

- **Previous versions** If you have a Digital Image product previous to the 2006 edition already installed, installing a 2006 product will make both programs available on your computer.
- **Upgrade from another 2006 product** You can install a Digital Image 2006 product that has more features than a 2006 product already installed. The version of Digital Image with fewer features will be uninstalled automatically before the new installation begins. Your pictures and projects will not be deleted.
- **Blocked downgrade** If you have a Digital Image 2006 product installed, you will not be able to automatically install a 2006 product with fewer features. To install the version with fewer features, you must first uninstall the version with more features.

Reinstalling or Removing Digital Image

If you are having problems running Digital Image, reinstalling the program may help it to run better on your computer.

You should not attempt to remove Digital Image by deleting the program files from your hard disk. Instead, use the Digital Image Installation Wizard to properly uninstall the program.

To remove or reinstall Digital Image on Windows XP:

1. Log on to the computer as an administrator.
2. From the Windows **Start** menu, click **Control Panel**.
3. Click **Add or remove programs**.
4. From the list of installed programs, click the version of Digital Image you want to remove or reinstall.
5. Click **Change/Remove**.
   The Installation Wizard opens.
6. Follow the instructions on the screen.

To remove or reinstall Digital Image from Windows 98, Windows 2000, or Windows Millennium Edition:

1. From the Windows **Start** menu, point to **Settings**, and then click **Control Panel**.
2. Click **Add/Remove Programs**.
3. From the list of installed programs, click the version of Digital Image you want to remove or reinstall.
4. Click **Add/Remove**.
   The Installation Wizard opens.
5. Follow the instructions on the screen.

CHAPTER 2

Welcome to Digital Image Suite

2 Welcome to Digital Image Suite

Congratulations on your purchase of Microsoft Digital Image Suite. The suite is composed of two programs: Digital Image Suite Editor and Digital Image Suite Library.

Digital Image Suite Editor provides a unique combination of robust photo-editing tools and professional-quality photo projects. While easy to use, Digital Image Suite Editor offers powerful imaging technology that puts you in control of editing and enhancing your photos. It provides advanced editing features such as selection tools, Smart Erase, and the blending brush to help you get professional editing results quickly and easily. When you've finished editing your photos, it's a simple process to automatically stitch together a panorama from multiple pictures, create prints, or share your photos through e-mail or a mobile device like a smartphone or PDA. You can even use your photos in one of the professionally designed templates for letterhead, business cards, Web photo albums, and more.

Digital Image Suite Library is a powerful tool for organizing, finding, and viewing your pictures. You can use the program to locate your pictures using folders or by browsing labels, flags, and ratings. You can view your pictures with the Library's full-screen slideshow viewer and even copy pictures to CD.

What You'll Find in This Book

The Digital Image Suite User's Manual introduces you to some important features in Digital Image Suite: how to get images into the program, edit images, add effects and borders, create projects, and print.

This book also provides an overview of some of the most important concepts of digital imaging. You'll find practical information about using digital cameras and scanners, and optimizing your monitor to work with photos.

The final section of this book offers a selection of articles on digital photography with plenty of sound advice from professional photographers.

Other Helpful Resources

This User's Manual is not an exhaustive resource for everything you can do in Digital Image Suite. For step-by-step instructions about all of the program's features and projects, check out the online Help system, available from the Startup Window or the Help menu. Or, for a demonstration of some of Digital Image Suite's key features, watch one of the Instructional Videos.

Digital photography is exciting and fun, and Digital Image Suite makes it easy to get professional results. We're confident that Digital Image Suite will be an enjoyable part of your digital-imaging experience.

CHAPTER 3

Opening and Importing Pictures

3 Opening and Importing Pictures

Digital Image makes it easy to import and open your pictures quickly. To import pictures from your camera or removable media to your computer, use the Import Pictures Wizard. This wizard is designed to streamline the file transfer process, allowing you to name the picture files and destination folder. To open pictures for editing, use the file browser. The file browser displays thumbnails of all your pictures, so you can quickly choose the ones you want.

Importing Pictures

The Import Pictures Wizard is a convenient way to transfer pictures and video clips from your digital camera, scanner, flash memory card, or some other storage location to your computer.

Launching the Import Pictures Wizard automatically

Windows Millennium Edition and Windows XP can automatically detect compatible cameras and other photo media such as photo CDs. This detection should occur when you:

- Connect a compatible camera to the computer and turn on the camera.
- Connect a compatible scanner to the computer and turn on the scanner.
- Connect a compatible card reader to the computer and insert media.
- Insert a photo CD, DVD, or other storage media into a drive on the computer.

This automatic detection feature is only available on computers running Windows Millennium Edition or Windows XP.

To set Windows to launch the Import Pictures Wizard automatically:

1. Connect your compatible camera, scanner, or other device to the computer, and then turn on the camera or device.
   - or -
   Insert the removable media into a drive or card slot on the computer.
2. When Windows detects the picture files, Windows will ask you what you want to do with the pictures.
3. Click **Import pictures to my computer using Microsoft Digital Image Import Wizard.**
4. Select the **Always do the selected action** check box.
5. Click **OK**.
6. Click the device you want to use, and then click **OK**.

Starting the Import Pictures Wizard manually

If Windows does not automatically detect your device or other media, you can start the Import Pictures Wizard manually.

To start the Import Pictures Wizard manually:

1. Start Digital Image.
2. On the **File** menu, click **Import Pictures**.
3. Click the device you want to use, and then click OK.

- or –

1. Start Digital Image Suite Library.
2. On the **File** menu, click **Import Pictures and Videos**.
3. Click the device you want to use, and then click OK.

Opening Pictures for Editing

With Digital Image, you can open pictures for editing from a variety of sources, including your computer, storage media, and most cameras and scanners.

Using the file browser

You can use the file browser to locate your pictures and open them for editing. The file browser can be used to open pictures from a large number of locations, including the following:

- The hard drive on a computer.
- An external hard drive.
- A digital camera that is a USB Mass Storage Class device. (A USB Mass Storage Class device works as a "virtual drive," letting you browse and open photos from the device as you would from a hard disk or floppy disk.) Although you can open pictures from a camera in this way, you will probably prefer to use the Import Pictures feature.
- A card reader.
- A USB drive.
- A photo CD or DVD.
- A floppy disk.
- A network location.

This picture identifies the main features of the file browser:

1. **All Files tab** Click the **All Files** tab to view the folder structure on your computer. Click a folder to display its contents and subfolders. The folder structure includes internal and external drives on your computer, including disk drives, card readers, and USB Mass Storage Class digital cameras.
2. Digital Image Library tab Click the Digital Image Library tab to find any picture you have cataloged in the Library. You can also use the Library's View By and Group By features to make it easier to find the pictures you want.
3. **MSN Groups tab** Click the **MSN Groups** tab to open pictures that you have stored on MSN Groups.
4. **Look in box** Displays the name of the current folder selected on the **All Files** tab.
5. **View menu** Use this menu to change the way the image files are displayed.
6. **Thumbnail size slider** Move the slider to change the size of the thumbnails.
7. **File name box** Displays the file name of a selected thumbnail.
8. **Files of type menu** Use this menu to change the types of image files to be displayed.
9. **Thumbnails** Small versions of your photos stored in the current folder.
10. **OK** Opens the selected thumbnails.
11. **Cancel** Closes the file browser without opening any photos.

File formats compatible with Digital Image

Digital Image can open photo files in any of the following formats:

- Adobe Photoshop (.psd)
- Enhanced Metafile (.emf)
- EPS (.eps)
- FlashPix (.fpx)
- GIF (.gif)
- Home Publishing (.php)
- JPEG (.jpg)
- Kodak Photo CD (.pcd)
- PC Paintbrush (.pcx)
- Picture It! (.png, .php, .mix, .fpx)
- PNG (.png)
- RAW (.crw, .cr2, .tif)
- TIFF (.tif)
- Targa (.tga)
- Windows Bitmap (.bmp)
- Windows Metafile (.wmf)

To open pictures with the file browser:

1. If opening pictures from a USB Mass Storage Class camera, read your camera's documentation and make sure that you have installed the camera's software and drivers properly. Make sure your camera is turned on and connected to your computer.
2. On the **File** menu, click **Open**.
3. Click the **All Files** tab.
4. In the **Look in** list, click the drive, folder, or network location that contains the picture you want to open.
5. In the folder list, locate and open the folder or location that contains the pictures.
   Thumbnails of pictures in that folder appear in the right pane.
6. Select the picture you want to open. To select multiple pictures, press CTRL as you click the thumbnails.
7. Click **OK**.

Opening pictures from other cameras

If your camera does not show up as a drive in the file browser, it is probably designed to work using TWAIN or WIA support. For many cameras, Digital Image works with TWAIN and WIA and your camera's software so that you can open photos directly into Digital Image.

To open photos from a camera that uses WIA support:

1. Make sure that you have installed all the drivers that came with your camera.
2. Connect your digital camera to your computer, and then turn on the camera.
3. On the **File** menu, click **Import Pictures**.
4. If more than one device appears in the dialog box, click the one that represents your camera.
5. Click the pictures you want to import. If you want to import more than one picture, press CRTL as you click the pictures.
6. Click **Next**.
7. The pictures are copied to the My Pictures folder on your hard drive.

Using your camera's software

Some digital cameras—especially older models—may not function as a virtual drive or be TWAIN or WIA compliant. For these cameras, use the software provided by the camera to download the photos to a folder on your computer. Then open them with the file browser.

About TWAIN and WIA

TWAIN is interface software that allows communication between a camera and your computer. Many digital cameras come with a TWAIN driver.

WIA is a newer interface that works similarly to TWAIN, but often provides more control over the device. WIA is compatible with TWAIN, but is only available on some computer operating systems.

Troubleshooting tips for opening pictures from a camera

- Your camera must be connected and turned on before you start the digital camera task, or it will not appear in the list of cameras and drives.
- If you've connected your digital camera to your computer, but can't see your pictures, make sure the connections are secure, the camera is turned on, and the batteries are charged. The camera might not start downloading if its batteries are low on charge. Some cameras are equipped with an A/C adapter that you can use instead of batteries.
- If your camera does not appear in the list of cameras and drives, or if you receive an error message when you click **Download**, start your camera software from the operating system **Start** menu.
- For more information about downloading photos using the software included with your camera, consult your camera's manual.

Opening pictures from a scanner

Digital Image supports two types of scanner formats: TWAIN and WIA. If your scanner doesn't use a TWAIN or WIA interface, you need to use the software designed specifically for the make and model of your scanner. Many scanner manufacturers provide free updates to their drivers on the Web.

To connect your scanner

1. Install the software that came with your scanner.
2. Turn off your scanner and computer.
3. Attach the connector cable from your scanner to your computer.
4. Turn on your scanner and computer.

Once the scanner is connected and recognized by your computer, you're ready to scan.

To scan a photo with a flatbed TWAIN or WIA scanner:

1. Connect your scanner to your computer, and then turn on the scanner.
2. Place your picture on the scanner.
3. On the **File** menu, click **Import Pictures**.
4. If more than one device appears in the dialog box, click the one that represents your scanner.
5. Depending upon the type of scanner you have, you will either see the **Scan Picture** pane or the **Import Pictures Wizard**.

If you see the **Scan Picture** pane:

1. Select your scanner from the list.
2. Choose the **Automatic Scan** option from **Click a scanning method**.
3. Click **Scan**.

If you see the Import Pictures Wizard:

1. If you want to immediately open the scanned picture for editing, click **Open the picture for editing**.
2. Click **Next**.
3. Select a place on your hard drive where the scanned picture will be stored and specify a file format. The default JPEG format is usually an excellent choice for scanned pictures.
4. Select a scanning method. Most of the time, you should choose **Automatic Scan** to get a high quality, color picture.
5. Click **Next**.

Can this photo be printed?

To find out if a photo has enough resolution to print, see the "Selecting a Print Size" section of the "Saving and Printing Pictures" chapter.

Opening a Photo Sent Through E-mail

Many friends and family members enjoy sending photos through e-mail. When you receive photos through e-mail, you can save them to your computer and then work on them with Digital Image.

Many photos sent through e-mail are low-resolution photos, which are not suitable for large prints. But low-resolution photos may be fine for online viewing or printing at small sizes.

To open a photo sent through e-mail:

Use your e-mail program to save the photo to a folder on your computer. Save the photo to a folder that will be easy for you to locate later, such as the My Pictures folder.

1. In Digital Image, click **Open** on the **File** menu.
2. The **File Browser** dialog box opens.
3. Click the **All Files** tab.
4. On the **All Files** tab, browse to the folder containing the photo, and then click the folder.
5. Select the photo, and then click **Open**.

Opening a Picture from a Web Page

When you surf the Internet, you may come across pictures that you would like to use in your projects. Unless the Web site uses image protection, you can capture these images and use them for your own projects. Keep in mind, though, that even unprotected pictures may still have a copyright and you should have the permission of the Web site owner before saving and using pictures you find. Also, Web pictures are usually low resolution, so they may not be suitable for printing. But you could still use the images in a project to be viewed online.

To open a photo from a Web page:

1. Make sure that both Digital Image and your Web browser are open and running on your computer.
   A button for each program appears in the taskbar at the edge of your screen.
2. On the taskbar, click the button for your Web browser program.
3. In your Web browser, locate the Web page that contains the picture you want.
4. Right-click the picture, and then click **Copy**.
5. On the taskbar, click the button for Digital Image.
6. On the Digital Image **File** menu, click **New**.
7. Select a canvas size, and then click **Done**.
   A blank canvas opens in the workspace.
8. On the Digital Image **Edit** menu, click **Paste**.
   The new picture appears on the canvas.

Once the photo is opened in Digital Image, you can edit it as you would any other photo and save it to your computer.

Watch for copyrights

Pictures you see on the Web may be copyrighted, so be sure to read the site's legal information or get permission from the site's owner before you use an image.

CHAPTER 4

Digital Image Suite Editor Basics

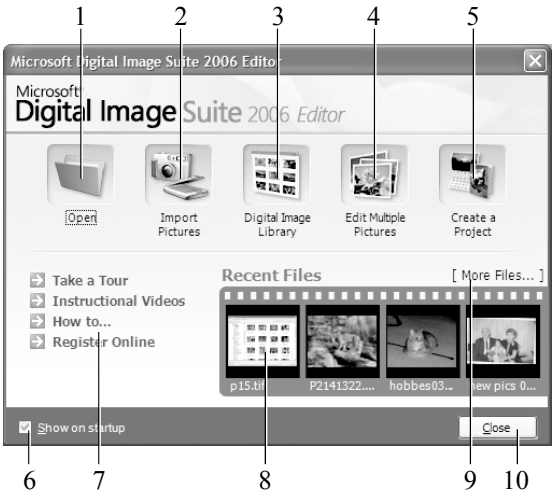
4 Digital Image Suite Editor Basics

This chapter covers some of the fundamental aspects of Digital Image Suite Editor that you'll need to get started. You'll find information on the Startup Window, the work area, basic image manipulation, applying text, and Help resources.

Startup Window

The Startup Window is a quick launching point to your pictures, Mini Lab, projects, the Library, recently opened files, and Help.

By default, the Startup Window opens every time you start Digital Image. After closing the Startup Window, you can open it at any time from the main work area by clicking the Startup Window button in the Common Tasks list. This diagram points out the main features of the Startup Window.

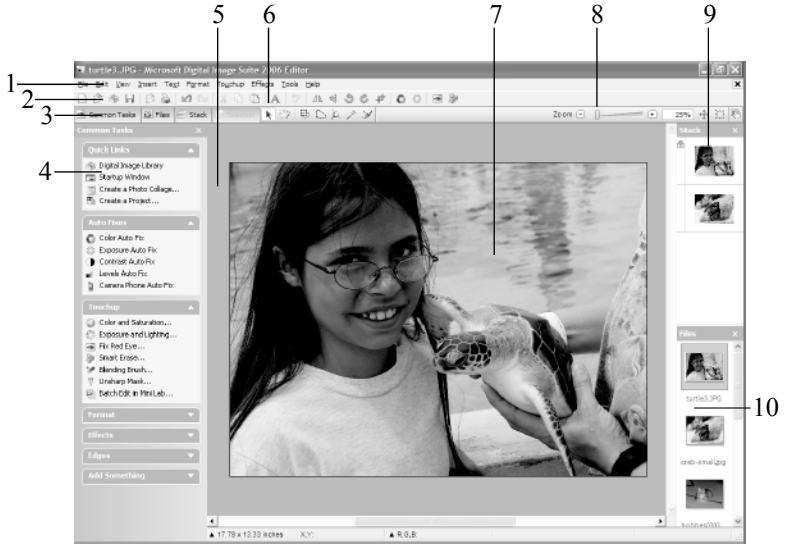


1. **Open** Click this button to open the file browser, where you can open photos from your hard drive, a network drive, a digital photo card reader, a CD or DVD, or a floppy disk.
2. **Import Pictures** Click this button to import one or more pictures from a digital camera, scanner, or other external storage device.
3. Digital Image Suite Library Click this button to open the Library, where you can find and organize your pictures.
4. **Edit Multiple Pictures** Click this button to open the Mini Lab. The Mini Lab helps you perform routine editing tasks—such as rotating, resizing, or adjusting colors—on multiple pictures at the same time.

5. **Create a Project** Click this button to pick a project design. You'll find a variety of projects—such as calendars, greeting cards, and album pages—designed to work with your photos. Projects are organized by type and by theme.
6. **Show on startup check box** Select this check box to have the Startup Window open every time you start Digital Image.
7. **Help links** Click these links to go directly to resources that can help you get the most out of Digital Image and digital imaging.
   - **Take a Tour** launches the product Tour.
   - **Instructional Videos** displays links to the different videos available.
   - **How to…** displays a collection of image-editing lessons.
   - **Online Photo Tips** links you directly to the digital photography section of the MSN Photos Web site.
   - **Register Online** links you to the registration page of the Microsoft Web site.
8. **Recent Files** See thumbnails of the last four pictures that you have edited. Click on one of the thumbnails to open that file.
9. **More Files** Click this button to open the file browser, where you can open pictures from your hard drive, a network drive, a digital photo card reader, a CD or DVD, or a floppy disk.
10. **Close** Click this button to close the Startup Window and go to the main work area.

Examining the Work Area

Most of the picture-editing tasks you perform in Digital Image will be in the main work area. When you open Digital Image and close the Startup Window, you see the main work area. The picture below identifies the key elements of the Digital Image work area.



1. **Menus**
   Menus provide access to all of the Digital Image features. The Help menu gives you access to the Help window, the Instructional Videos, and the Digital Image Tour.
2. **Toolbar**
   The toolbar contains shortcut buttons for single-click access to some of the most common commands. To see the name of a toolbar button, hover the mouse pointer over the button.
3. **Workspace Toolbar**
   This toolbar contains buttons for the Common Tasks list, Stack, and Files palette. You can create more room in the workspace by hiding any of these tools.
4. **Common Tasks list**
   The Common Tasks list is an easy way to locate features. This list provides convenient access to some of the most common tasks, as well as single-click access to the Mini Lab, project selector, and the Startup Window. All of the features found in the Common Tasks list—as well as additional features—are also available in the menus.

5. **Workspace**
   The gray area represents the workspace, the area that the canvas sits within. You can use the zoom controls to magnify or reduce the canvas so that it covers more or less of the workspace.
6. **Selection Tools**
   The selection tools allow you to isolate and work on a specific part of the picture.
7. **The canvas**
   The white area is called the canvas, and it represents the printable area of the page. When you open a picture, the canvas is often not visible since it is covered entirely by the picture. You can use the zoom controls to magnify or reduce the canvas so that it covers more or less of the workspace.
8. **Zoom controls**
   The zoom controls magnify or reduce your photo so that you can see it in more or less detail.
9. **Stack**
   The Stack displays a thumbnail of each object in your picture. You can rearrange the order of the objects by dragging thumbnails up or down within the Stack.
10. **Files palette**
    The Files palette displays a thumbnail of all of the currently open pictures. You can switch your active picture by clicking a thumbnail in the Files palette. You can also add a picture to the one you're working on by dragging the thumbnail from the Files palette to the canvas.

Image Formatting

When you have a picture open on the canvas, there are a number of ways to re-size or re-orient it.

Changing picture size

When you open an image onto the canvas, the on-screen representation of the image is automatically sized so that it fills the workspace. As a result, a high resolution image, such as 1600 x 1200 pixels, will appear onscreen just the same size as a low resolution image that's only 640 x 480 pixels. For this reason, viewing a picture on the canvas is not a reliable way of judging an image's actual resolution.

Whenever you resize an image, consider these three factors:

- *Image size*, which is the size of the printed image.
- *Pixel dimensions*, which is how many colored dots (pixels) make up the picture.
- *Resolution*, which is the density of the pixels in the picture.

The image size is the product of the pixel dimensions multiplied by the resolution. For example, if you have a picture made of 1200 x 1800 pixels and print it at a resolution of 300 pixels per inch, it will print at a size of 4" x 6". Given this relationship, if you change one of the three settings, one of the other settings will also have to change to keep the relationship equal. If you enlarged the picture in the previous example from 4" x 6" to 8" x 12"—and you kept the pixel dimensions the same—then the resolution would decrease from 300 pixels per inch to 150 pixels per inch.

When you resize a picture, it is generally not a good idea to try to increase or decrease the pixel dimensions since this reduces image quality. In most cases, it's not necessary to adjust the image size, since that can be handled automatically during printing. For high-quality prints, it's generally good to keep the picture's resolution at least 300 pixels per inch. But depending on you printer model and the image quality you desire, you may be satisfied with prints at only 150 pixels per inch. For Web use, 72 pixels per inch is usually considered sufficient.

To resize a picture:

1. On the **Format** menu, click **Resize Image**.
2. Click one of the following to lock the setting:
   - **Image size**
   - **Pixel dimensions**
   - **Resolution**
3. Enter amounts for the settings you want to change.
4. Click **Done**.

Applying Text

You can add text to any picture and easily change the text font, font color, font size, alignment, and emphasis. You start by adding a text box, and then you edit the text in the box. A text box is its own layer on the Stack.

To add text:

1. On the **Text** menu, click **Insert Text**.
   A text box appears.
2. Type your text. As you add text, the text box will automatically expand vertically to fit all of your text.
3. To change the width of the text box, select the text box and drag one of the side resize handles.
4. To move the text box, select it, hover the mouse pointer over the edge of the text box until the move handle appears, and then drag the move handle.

Once you've added the text, you can select the text to edit it. You can also select the text and use the toolbar buttons to change formatting. When text is selected, the following tools are available on the toolbar for formatting:

- **The Font menu**

lets you choose between 140 different fonts.
- **The Font Size menu**

lets you choose font sizes from 8 to 620 points.
- **The Font Color button** lets you choose from a standard palette of colors or choose a custom color.
- **The Bold button** adds bold formatting to the text.
- **The Italic button** adds italic formatting to the text.
- **The Underline button** underlines the text.
- **The Alignment button** has menu choices for Left, Right, Center, and Justify.
- **The Bullets and Numbers button** lets you apply or cancel formatting for bulleted or numbered lists.

Accessing Help from the keyboard

You can access the online Help system at any time by pressing F1 on the keyboard.

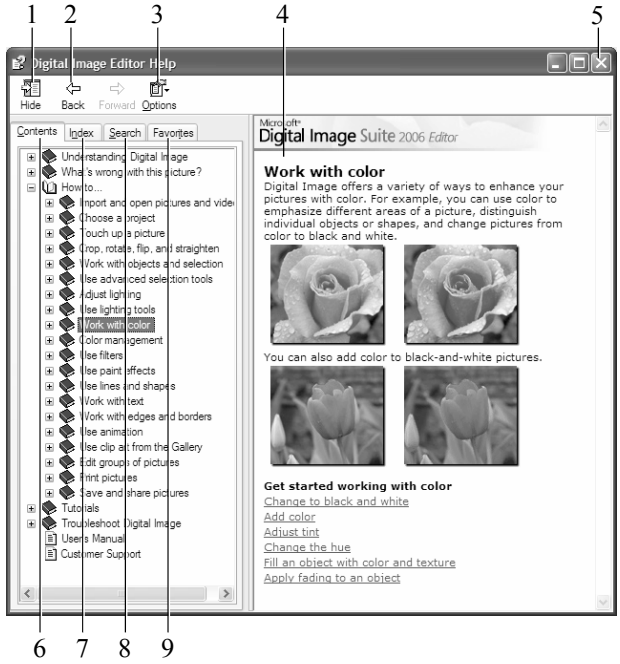
Help Resources

There are multiple ways that you can learn more about using Digital Image. In addition to this User's Manual, there is the online Help system, the product Tour, and Instructional Videos. The following sections describe the types of information available.

Online Help

Digital Image online Help is the most comprehensive of the Help resources. It provides step-by-step instructions, overviews, troubleshooting topics, technical support, and the "What's wrong with this picture" diagnostic tool. Help includes several ways to find information, including a table of contents, a keyword index, and a full-text search of all Help topics.

This diagram identifies the main features of the Help window.



1. **The Show/Hide button** Click this button to expand or collapse the left pane of the Help window.
2. **The Back button** Click this button to go back to the last Help topic.

3. **The Options menu** This menu has options to print a topic or to set options such as **Internet Options**, where you can change the font size in the Help window.
4. **The Content Pane** Displays the current Help topic.
5. **The Close button** closes the Help window.
6. **The Contents tab** displays the Help table of contents.
7. **The Index tab** lets you find keywords in the index list.
8. **The Search tab** finds topics that contain words that you enter.
9. **The Favorites tab** lets you save topics for quick access later.

To access online Help:

1. On the **Help** menu, click **Digital Image Help**.

Using the table of contents

You can use the table of contents to locate information by subject. The table of contents is a useful way to see all of the features available in each category of features.

To use the table of contents:

1. In the left pane of the Help window, click the **Contents** tab.
2. To expand a book in the contents, click the plus sign next to it.
3. To display a topic, in the contents list, click the topic title.

Using the index

You can use the index when you are looking for information about a specific term or keyword.

To use the index:

1. In the left pane of the Help window, click the **Index** tab.
2. In the **Type in the keyword** to find box, type the word you want to find.
3. In the results list, select the word you want to find, and then click **Display**.

Using the search

You can use the search function to find all the topics in Help that contain a word or combination of words.

To use the search:

1. In the left pane of the Help window, click the **Search** tab.
2. In the **Type in the keyword to find** box, type the word for which you want to search, and then click **List Topics**.
3. In the **Select topic to display** list, select the topic you want to view, and then click **Display**.

Product Tour

The Digital Image Tour uses pictures, animations, and text to demonstrate the most popular and useful features of the program.

To take the product tour:

1. On the **Help** menu, click **Take a Tour**.
   The Tour opens, displaying icons to represent different categories of features.
2. Click an icon.
   A feature list appears on the left side of the window.
3. Click a feature.
   Graphics and text appear that explain the feature.
4. Repeat steps 2-4 to learn about more features.
5. To close the Tour, click **Close**.

Instructional Videos

Instructional Videos use animation and narration to show you how to use a variety of image-editing features on your photos.

To watch an Instructional Video:

1. On the **Help** menu, click **Instructional Videos**.
   The Help window opens to a topic about Instructional Videos.
2. Click a video title link.
   The Video player opens and the Video begins.

The Instructional Videos are accompanied by complete, online tutorials that let you walk through the tasks at your own pace. To open the online tutorial, click the **Written Tutorial** button on the Video player.

Technical Support

The type of Technical Support resources available vary based on where you live and how you obtained your Digital Image product.

To view Technical Support information:

1. On the **Help** menu, click **About Digital Image Pro 2006.**
2. Click **Tech Support**.

CHAPTER 5

Basic Touchup

5 Basic Touchup

Almost all pictures can be improved with basic touchup tools. Digital Image Suite Editor's touchup tools can be used to correct common problems such as red eye, crooked pictures, lighting problems, or similar distractions that can ruin a photo. In many cases, Digital Image helps you eliminate basic problems with just a few clicks.

Adjusting Exposure and Lighting

When you take a photo with an automatic camera, the camera's automatic exposure feature measures the available light and determines how much light is required to take the photo. Sometimes, the exposure meter's measurement is slightly too low or too high, creating problems with the brightness and contrast in the photo. Digital Image provides tools to fix the exposure and lighting.

To correct exposure and lighting:

1. On the **Touchup** menu, click **Exposure Auto Fix**.
2. If you are not satisfied with the result, try fixing the contrast. On the **Touchup** menu, click **Contrast auto fix**.
3. If you are not satisfied with the results, fine-tune the settings. On the **Touchup** menu, click **Exposure and Lighting**.
4. Adjust the sliders to manually correct the exposure in the picture.
5. Click **Done**.

The picture on the left is both too dark and too low contrast. The Contrast auto fix tool was applied to the version on the right, correcting both the brightness and contrast levels.

Making a copy to touch up

Never edit your only copy of a picture. Always make a copy or choose **Save As** to save the edited file with a different name. If you aren't satisfied with the results, you can always start again from the original.

Setting the white balance on a digital camera

Many digital cameras allow you to set the white balance for specific types of light, such as sunlight, incandescent, and flash. Using this feature can help reduce tint problems in your pictures.

Zooming in to find gray

If there are no significant areas of neutral color in your photo, use the zoom controls to magnify the picture on the screen. When you zoom in, you might be able to use a very small area of gray to reset the colors in the picture.

Correcting a Color Cast

When you take photographs, the source of the light can create a colored cast in the photo. We tend to think of light being white, but nearly every light source has its own unique color. For example, natural sunlight has a large component of blue, while incandescent (tungsten) lights—including most household light bulbs—give off a reddish or yellowish cast.

When taking a photo, you can compensate for these different colors of light by setting the white balance, or by using special filters in front of the lens. But if you end up with a cast in your pictures, use the Color and Saturation tool to correct the balance of colors to make the lighting look more natural.

If you have already used the Levels auto fix tool, the tint problems in the picture may already be corrected. Use the Color and Saturation tool to make additional adjustments to the tint.

To adjust the color cast:

1. On the **Touchup** menu, click **Color and Saturation**.
2. With the eyedropper, click an area in the picture that should be gray or neutral—in other words, not too colorful, too dark, or too light. Digital Image automatically corrects the colors.
3. If you are not satisfied with the results, use the **Source Lighting** slider to fine-tune the overall color tint of the picture.
4. Click **Done**.

Fixing Red Eye

Using your flash in low-light situations can give your subjects red, unnatural-looking eyes. The Fix Red Eye tool darkens the red spots in the eyes to reduce or eliminate the redness.

To fix red eye:

1. On the **Touchup** menu, click **Fix Red Eye**.
2. Use the pan and zoom controls to magnify your picture and focus on the red eyes in the photo.
3. Click the red part of the eyes. You can click up to two eyes at once.
4. Click **Red-eye Auto Fix**.
   The redness in the eyes is removed.
5. If necessary, you can use the **Intensity of correction** and **Size of correction** sliders to fine-tune the effect, or repeat steps 3 and 4 until the red is eliminated.
6. Click **Done**.

Straightening a Picture

If you took a photograph while unintentionally holding the camera at an angle, the horizon or other straight lines will appear tilted. This tilt can be a distraction in the picture, but is easily fixed with the Straighten Picture tool.

The Straighten Picture tool rotates the picture to make the horizon level.

To make the horizon level, the Straighten Picture tool rotates the picture on the canvas. When rotated, part of the picture overlaps the edge of the canvas, and these areas would be removed during printing. The rotation also creates empty areas at the corners of the canvas. Fortunately, these problems are solved by the Auto Crop feature which is part of the Straighten Picture tool. After you straighten the picture, Auto Crop trims the edges of the picture so that it becomes aligned with the canvas.

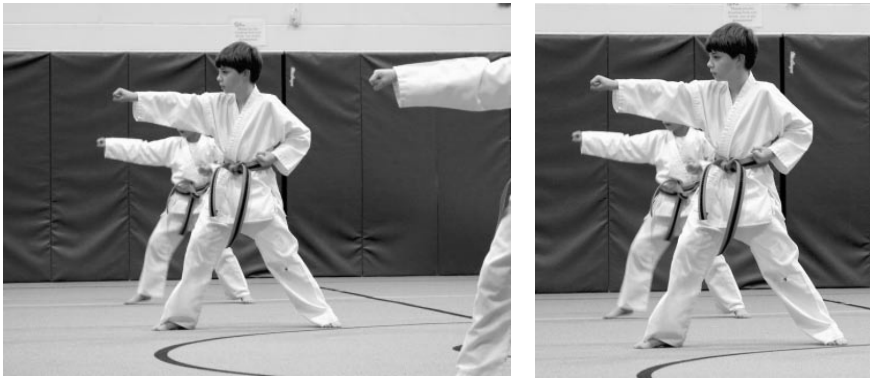
To straighten a picture with Auto Crop:

1. On the **Format** menu, point to **Straighten Picture**, and then click **Canvas**.
2. Identify a line in the picture that should be straight (such as the horizon), and then click one end of the line.
3. Click the other end of the line.
   The picture is automatically straightened.
4. Make sure the **Auto Crop** check box is selected.
   The area of the picture that will be cropped is shown in lightened color around the edges.
5. Click **Done**.

Cropping

Cropping is an easy way to improve the composition of a picture. For example, if your picture has distracting background elements along the top, bottom, or side, you can crop away these parts of the background to focus the attention on the subject.

When you crop a picture, you are removing pixels, and therefore lowering the effective resolution (although the dots per inch will stay the same). If you crop a significant portion of the original, you're limiting the extent to which you will be able to enlarge the picture for printing. This is why it's better to compose the picture as best you can when you take it, rather than relying on heavy cropping later.



Cropping a picture allows you to eliminate distractions and improve the composition.

Cropping your picture to a specific proportion lets you control exactly where the picture will be cut. Otherwise, if your picture is not the same proportion as the print size, some of the picture might be trimmed during printing to fit into the printable area of the page.

Using the rule of thirds

When composing a photograph, many beginning photographers tend to center their subject directly in the middle of the frame. While this technique may be the easiest way to get the subject in focus with a point-and-shoot camera, it is not always the most interesting way to present the subject.

Most advanced photographers follow the *rule of thirds* when composing the space inside a picture frame. The rule of thirds is used throughout the graphic design world, because it helps to create balance between the subject and the background. When you compose a picture according to the rule of thirds, you

mentally divide the frame into thirds both horizontally and vertically (imagine a tic-tac-toe grid), and place the point of interest on one of the four spots where the lines intersect.

If the photo includes a person or animal, you can place the face on one of the four points, looking toward the center of the scene. If the photo includes the horizon, it should run about one-third from the top or one-third from the bottom, depending on whether the terrain or the sky is the center of focus.

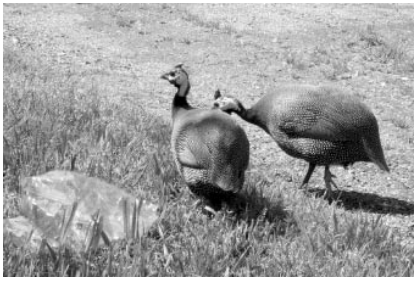
The cropped picture is a more interesting composition because it follows the rule of thirds.

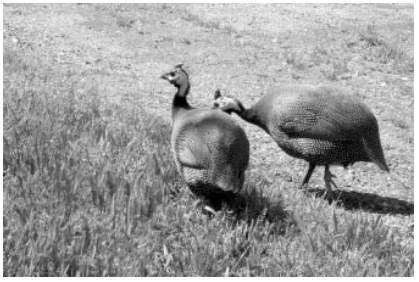
To crop a picture using the rule of thirds:

1. On the **Format** menu, point to **Crop**, and then click **Canvas**.
2. Under **Select a proportion**, click a proportion.
3. Select the Show guidelines for the rule of thirds check box.
4. Click a starting point on your photo, and then drag the outline to the opposite corner of the area to be cropped.
   The guidelines show the cropped area divided into thirds vertically and horizontally.
5. Move and resize the cropped area so a focal point in the picture is positioned at one of the intersections of the guidelines.
6. Click **Done**.

Using Smart Erase

The Smart Erase tool helps you remove distractions from pictures. Smart Erase can remove items such as telephone poles, power lines, or even strangers in the background. In addition to removing the unwanted element, Smart Erase fills in the area with colors and patterns from the surrounding areas. In many cases, Smart Erase makes it hard to tell that the distraction was ever there.





With the consistently patterned background in this picture, Smart Erase was able to do a smooth job filling in the area over the distraction.

Since Smart Erase incorporates pixels from surrounding areas to fill in the area that has been removed, the tool works best if the surrounding areas are consistently patterned.

To use Smart Erase:

1. On the **Touchup** menu, click **Smart Erase**.
2. Trace around the area you want to fill, releasing the pointer on the spot where you began tracing.
3. Click **Fill in**.
4. To fill in additional areas, repeat steps 2 and 3.
5. Click **Done**.

Using Smart Erase with the clone brush

If you don't get perfect results right away with Smart Erase, you can use the clone brush to clean up the background to make it look more natural. Learn more about the clone brush in the "Advanced Picture Editing" chapter.

Removing Spots and Blemishes

Whether you take portrait photographs or just informal snapshots, you usually want to present your subjects in a flattering light. Many photos of people can be enhanced by removing spots or blemishes from the original photo. Using the Remove Spots or Blemishes tool, you click the spot or blemish, and the color from the surrounding pixels is used to paint over the discolored area.

This tool is also useful for removing isolated specks of dust from a scanned photo, or removing any other spots that detract from the photo.

With a few clicks of the Remove Spots or Blemishes tool, the blemishes disappear from the picture.

To remove a spot or blemish:

1. On the **Touchup** menu, click **Remove Spots or Blemishes**.
2. Zoom in on a spot or blemish.
3. To remove the spot or blemish, click it.
4. Click **Done**.

Removing Wrinkles

As with removing spots and blemishes, removing wrinkles is a good way to enhance photos that contain close-ups of people. You can make skin look smoother by removing crow's feet around the eyes or other wrinkles on the face. The Remove Wrinkles tool works by covering lines with the color of the surrounding pixels.

The Remove Wrinkles tool was used on the picture on the right, eliminating wrinkles around the eyes to make a more flattering portrait.

To remove wrinkles:

1. On the **Touchup** menu, point to **Other Photo Repair**, and then click **Remove Wrinkles**.
2. Click a circle that corresponds to the size of the wrinkle you want to remove.
3. Click the picture at one end of the wrinkle, and then click at the other end of the wrinkle.
   The wrinkle disappears.
4. Repeat step 3 to remove other wrinkles in the photo.
5. Click **Done**.

Removing curved wrinkles

The Remove Wrinkles tool can be used to remove curved as well as straight wrinkles. For curved wrinkles, break the wrinkle into sections and correct just one section at a time. This might give you better results than using a wider circle.

Fine tuning the lighting

If you need to make further adjustments after adding flash, you can use the exposure and lighting tools.

Adding Flash

In some lighting conditions, such as when the sun is low in the sky behind your subject, your subject will be very dark compared to the light in the background. Ideally, you could use your camera's flash for this situation, illuminating your subject as you take the photo. But if you forget to turn on your flash, or if your subject is out of your flash's range, your subject may come out too dark in the photo.

In this situation, you can use the Add Flash feature to lighten the dark parts of your photo, improving the exposure by imitating the light of a camera flash. The Add Flash tool works by lightening the darkest pixels in your picture, and also slightly increasing the contrast.

When the picture on the left was taken, the boats were out of the flash's range, so the whole foreground ended up in dark shadow. The Add Flash tool was used in the picture on the right to lighten the foreground and bring out the detail.

To add flash to a picture:

1. On the **Touchup** menu, click **Exposure and Lighting**.
2. Click **Add Flash**. Every time you click, the scene is brightened by a small amount.
3. Click **Done**.

Reducing Backlighting

In some photos, the subject might be properly exposed, but parts of the background might be overexposed. The Reduce Backlighting tool darkens the lightest pixels, minimizing the overexposure of the background.

The picture on the left lacks detail in the bright areas of the clouds, diminishing the beauty of the sky. In the picture on the right, the Reduce Backlighting tool was applied, which darkens the lighter pixels.

To reduce backlighting in a picture:

1. On the **Touchup** menu, click **Exposure and Lighting**.
2. Click **Reduce Backlighting**. Every time you click, the scene is darkened by a small amount.
3. Click **Done**.

Fixing severe lighting problems

If the lighting problems in your pictures are too severe to be repaired by using Add Flash or Reduce Backlighting, use the Levels and Curves tool to apply precise changes to the picture's shadows, midtones, and highlights.

CHAPTER 6

Advanced Picture Editing

6 Advanced Picture Editing

After you have done general touch ups to your pictures, you may want to use advanced editing tools for more precise editing or to apply special effects. The selection tools and multiple-object composites give you the power to edit very specific areas of your pictures. You'll also be able to transform your pictures with filters, color and edge effects, and specialized editing brushes.

Understanding Objects

For many advanced photo-editing tasks, you'll need to understand the concept of objects. An object is a part of a picture that can be edited individually. For example, when you add text to a picture, the text is a separate object from the background image. When you edit the text—say, making the font color red—the background picture remains unchanged because it is a separate object.

Working with Composites

A picture that contains multiple objects is called a *composite*. The Stack helps you work with composites by displaying each object separately. Using the Stack, you can easily select any object. Make sure the Stack is showing in the workspace when you are working with composites.

To show the Stack:

1. On the **View** menu, click **Stack**.

On the Stack, you'll see a thumbnail representation of each object in the composite. The top thumbnail represents the object that is the top layer in the composite. The bottom thumbnail represents the background object in the composite. Thus, the object that is lowest in the Stack may be at least partially obscured in the composite by the objects on top of it.

You can change the order of the objects in the composite by dragging thumbnails up and down the Stack. For example, dragging an object's thumbnail from the lowest position on the Stack to the top position will bring it to the foreground of the composite.

Locked Objects

When you open any single-object picture, such as a picture you took with your digital camera, the picture will, by default, be *locked* to its position on the canvas. When an object is locked to the canvas, the Lock icon is shown next to that object's thumbnail on the Stack. This Lock icon indicates that you will not be able to drag the object around on the canvas.

To lock or unlock an object:

1. Right-click the object's thumbnail on the **Stack**.
2. Click **Lock** or **Unlock**.

Selecting Objects with the Object Tool

The *Object tool* allows you to select one or more whole objects at a time. With the Object tool, you can move, resize, and rotate selected objects by dragging the object on the canvas or using the resize handles.

Each time you start Digital Image, the Object tool will be selected by default. You will be able to accomplish many different editing tasks by using the Object tool as your only selection tool. Unlike the other selection tools, the Object tool does not have an options palette.

To select an object with the Object tool:

1. Make sure that the Stack appears in the workspace.
2. Click the Object Tool button on the toolbar.
3. On the **Stack**, click the object.

When an object is selected with the Object tool and not locked to the canvas, *object handles* are displayed around the perimeter of the selection. Object handles are yellow circles that you drag to resize and rotate the object.

To move, resize, or rotate an object with the Object tool:

1. Select the object with the Object tool as described above.
2. If the selected thumbnail has the Lock icon displayed, right-click the thumbnail, and then click Unlock.
3. To move the selection, hold the cursor over the object until the move handle appears, and then drag the object on the canvas.
4. To resize the object proportionally, hold the cursor over one of the corner object handles until the resize handle appears, and then drag the resize handle.
5. To stretch the object, hold the cursor over the top, bottom, or side object handles until the resize handle appears, and then drag the resize handle.
6. To rotate the object, drag the rotate handle that is attached to the top of the selection box.

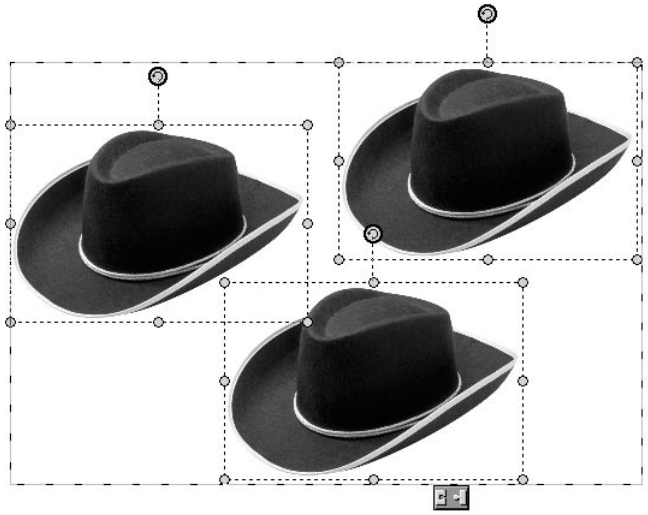
Selecting an object allows you to edit it without affecting other objects on the canvas. You can select an object by clicking it, either on the canvas or on the Stack. If you want to select a small object or one that is hidden behind other objects, it is often easiest to select it on the Stack.

Multiple Selection, Grouping, and Flattening Objects

Digital Image allows you to create composites that contain many objects. While objects are separate, you can edit each one individually. However, sometimes you may want to edit two or more objects at the same time. There are three methods to join objects so that you can edit them together. From least permanent to most permanent, the three methods for combining objects are multiple selection, grouping, and flattening.

Multiple Selection

Multiple selection links objects temporarily. For example, if you wanted to move three objects the same amount to the left, you could select the objects, and then drag them together on the canvas. Then, as soon as you select a different object to work on, the multiple-selected objects are no longer connected.



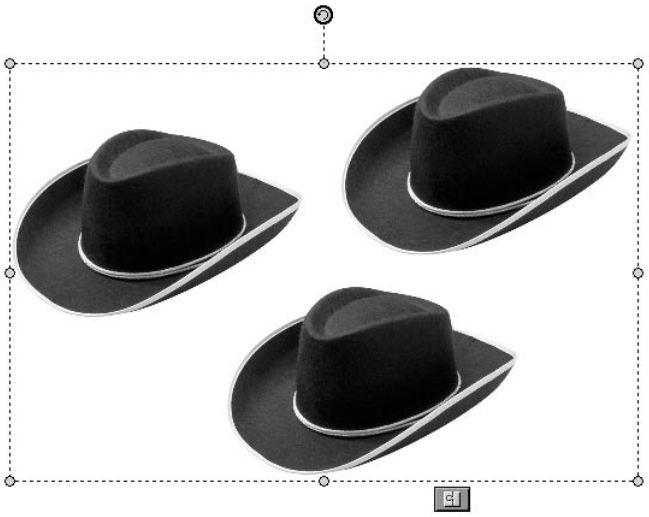
These three objects are a multiple selection, so they can be edited as a set and then separated later.

To select multiple objects:

1. Make sure that the **Stack** is showing.
2. Pressing CTRL, click each thumbnail on the **Stack** until all of the objects are selected.
3. To cancel the multiple selection, click any single object in the **Stack**.

Grouping Objects

Grouping objects allows you to edit multiple objects and then maintain the grouped relationship while you do other tasks. The grouping relationship is even preserved when you close a picture file saved in PNG Plus format. Grouped objects can later be ungrouped and edited individually.



These three objects have been grouped, as indicated by the Group icon at the bottom of the selection box.

To group objects:

1. Make sure that the **Stack** appears in the workspace.
2. Pressing CTRL, click each thumbnail on the **Stack** until all of the objects are selected.
3. On the **Edit** menu, click **Group**.
4. To cancel the group, click the group on the **Stack**, and then on the **Edit** menu, click **Ungroup**.

Flattening Objects

Flattening objects is a permanent action. If you will no longer need to edit objects individually, you can flatten objects into a single object. This allows you to work on the objects together and reduce the number of objects in your composite. Also, many editing tasks cannot be performed on a multiple selection. But if you flatten the objects together, they become a single object, so you will be able to edit them together.

To flatten multiple objects:

1. Make sure that the **Stack** appears in the workspace.
2. Pressing CTRL, click each thumbnail on the **Stack**.
3. On the **Edit** menu, click **Flatten Selected Objects**.

Automatic Flattening

When working with objects that are multiple-selected or grouped, some editing tasks—such as using advanced selection tools—will automatically flatten the selected objects into a single object. Digital Image will give you a warning message whenever two or more objects will need to be flattened to perform an editing function. When you see a warning message about flattening, you can click **Cancel** to prevent the objects from being flattened.

Flattening Objects During Saving

When you save a composite picture in the PNG Plus file format, each object is preserved separately. When you open the file again, you can edit each individual object.

However, most file formats for images do not support multiple objects. So if you save a picture in the JPEG format, for example, all the objects will be flattened into a single object. Even if you open such a JPEG file in Digital Image, you will not be able to edit objects individually.

Using Selection Tools

Selection tools give you more control and more options for editing images. They allow you to fix problems that exist in only part of the picture. You can also use selection tools to create new objects that can be duplicated or pasted onto other pictures.

Selection tools help you to isolate any part of a larger picture, which enables you to:

- Turn part of a picture into a separate object.
- Apply filters or other effects to a limited area of a picture.
- Duplicate part of an image within a picture.
- Combine parts from two or more pictures.

The selection tools are located on the toolbar next to the **Selection** options button. There are five selection tools available, and each one works well for a specific editing scenario. Select the method that best fits your picture and your intended use. In addition to the Object tool mentioned above, the other four selection tools are:

- Marquee tool
- Freehand tool
- Edge Finder
- Magic Wand
- Selection Brush

Anti-aliasing a selection

Anti-aliasing means that pixels on the edge of the selection can be partially selected. This technique helps to smooth the transition between the selection and the surrounding area. Anti-aliasing is useful when creating composites.

Feathering a selection

Like anti-aliasing, *feathering* a selection helps to smooth its edges. But where anti-aliasing only affects pixels directly on the selection border, you can feather a border of up to 250 pixels around the edge of the selected area.

The Marquee Tool

The Marquee tool helps you select part of an object in the shape of a rectangle, circle, or other shape. This tool is useful for cropping objects or pictures to a standard shape.

To make a selection with the Marquee tool:

1. Make sure that the **Stack** appears in the workspace.
2. On the **Stack**, click the object of which you want to make a partial selection.
3. On the toolbar, click the Marquee Tool button.
4. If the **Marquee Tool** options palette is not visible in the workspace, click the **Selection** button on the toolbar.
5. To keep the edges of the selection smooth, select the Anti-aliased check box on the **Marquee Tool** options palette.
6. On the **Marquee Tool** options palette, click a shape for the marquee selection.
7. To keep the marquee shape in a specific proportion, click **Shape proportions** on the **Marquee Tool** options palette, and then enter a height and width.
8. On the **Marquee Tool** options palette, choose whether you want to make a new selection, add to the current selection, or subtract from the current selection.
9. Drag the marquee pointer diagonally across the area you want to select.
10. To adjust the selection shape, click **Adjust marquee** on the **Marquee Tool** options palette, resize or rotate the marquee shape, and then click **Done**.
11. To feather the selection (to make it blend into the surrounding part of the picture), click **Feather** on the **Marquee Tool** options palette, enter the number of pixels that you want feathered around the edge, and then click **OK**.
12. To select the opposite area, click **Invert** on the **Marquee Tool** options palette.

The Freehand Tool

The **Freehand tool** helps you select part of an object by drawing an irregular shape.

1. Make sure that the **Stack** appears in the workspace.
2. On the **Stack**, click the object of which you want to make a partial selection.
3. Click the Freehand Tool button on the toolbar.
4. If the **Freehand Tool** options palette is not showing, click the **Selection** button on the toolbar.
5. To keep the edges of the selection smooth, select the **Anti-aliased** check box on the **Freehand Tool** options palette.
6. On the **Freehand Tool** options palette, click whether you want to make a new selection, add to the current selection, or subtract from the current selection.
7. On the picture, drag the pointer, and then click the starting point to complete the selection.
8. To feather the selection (to make it blend into the surrounding part of the picture), click **Feather** on the **Freehand Tool** options palette, enter the number of pixels that you want feathered around the edge, and then click **OK**.
9. To select the opposite area, click **Invert** on the **Freehand Tool** options palette.

The Edge Finder

The **Edge Finder** helps you select part of an object by tracing along well-defined edges. This tool is useful for cutting out or copying people or detailed items in a picture.

1. Make sure that the **Stack** appears in the workspace.
2. On the **Stack**, click the object of which you want to make a partial selection.
3. Click the **Edge Finder** button on the toolbar.
4. If the **Edge Finder** options palette is not showing, click the **Selection** button on the toolbar.
5. To keep the edges of the selection smooth, select the **Anti-aliased** check box on the **Edge Finder** options palette.
6. On the **Edge Finder** options palette, click whether you want to make a new selection, add to the current selection, or subtract from the current selection.
7. On the **Edge Finder** options palette, enter a value in the **Width** box. The Width is the number of pixels away from the pointer that the **Edge Finder** will try to detect an edge.
8. On the picture, click points along the edge of the item you want to select. As you trace, make sure that the edge stays within the zone of the Edge Finder.
9. To close the selection area, click the starting point.
10. To modify the selection, click **Adjust edges**, drag any point in the selection marked by a square, and then click **Done**.
11. To feather the selection (to make it blend into the surrounding part of the picture), click **Feather** on the **Edge Finder** options palette, enter the number of pixels that you want feathered around the edge, and then click **OK**.
12. To select the opposite area, click **Invert** on the **Edge Finder** options palette.

The Magic Wand

The **Magic Wand** lets you select parts of an object that are the same or similar colors. The Magic Wand is useful for selecting a consistently colored area—a blue sky for example—without having to trace around it.

1. Make sure that the **Stack** appears in the workspace.
2. On the **Stack**, click the object of which you want to make a partial selection.
3. Click the Magic Wand button on the toolbar.
4. If the **Magic Wand** options palette is not showing, click the **Selection** button on the toolbar.
5. To select only similarly colored pixels that are connected to each other, select the **Contiguous** check box. Also, selecting the **Smooth Edges** check box reduces the jaggedness of your selection.
6. On the **Magic Wand** options palette, enter a value in the **Tolerance** box. The Tolerance is the range of colors that will be included in the selection.
7. On the **Magic Wand** options palette, click whether you want to make a new selection, add to the current selection, or subtract from the current selection.
8. On the picture, click the color you want to select.
9. If the selection includes too much or too little of the area you want to select, enter a different value in the **Tolerance** box, and then make another selection.
10. To feather the selection (to make it blend into the surrounding part of the picture), click **Feather** on the **Magic Wand** options palette, enter the number of pixels that you want feathered around the edge, and then click **OK**.
11. To select the opposite area, click **Invert** on the **Magic Wand** options palette.

The Selection Brush

The **Selection Brush** is a powerful tool for extending an existing selection by "painting."

1. Make sure that the **Stack** appears in the workspace.
2. On the **Stack**, click the object in which you want to make a selection.
3. Use another tool to make a selection.
4. Click the Selection Brush button on the toolbar.
5. If the **Selection Brush** options palette is not showing, click the **Selection** button on the toolbar.
6. On the **Selection Brush** options palette, click to add to the current selection .
7. On the picture, drag to paint your selection, fine-tuning and extending the existing selection.

Editing and Copying Selected Areas

Using the advanced selection tools helps you to isolate a very specific area of a picture for editing or copying. For example, if a picture has generally good lighting levels, but a person's face in a picture is in dark shadows, you can make a selection of just the face, and then adjust the brightness and contrast only in the selected area. And now that you can apply anti-aliasing and feathering to the selection, your edits to the selected area can look natural since the edited area will blend smoothly with the surrounding pixels.

Copying, Cutting, and Pasting Selections

Advanced selection tools also allow you to cut out or copy part of an object to create a new object. These techniques allow you to trim a hole in a picture or create a new object that can be pasted in the same picture or in a different picture.

To cut a hole in an object:

1. Make sure that the **Stack** appears in the workspace.
2. On the **Stack**, click the object you want to cut a hole in.
3. On the toolbar, click a selection tool, and then select part of the object.
4. On the **Edit** menu, click **Cut**.

To copy and paste part of an object:

1. Make sure that the **Stack** appears in the workspace.
2. On the **Stack**, click the object you want to copy part of.
3. On the toolbar, click a selection tool, and then select part of the object.
4. On the **Edit** menu, click **Copy**.
   The selection is copied to the clipboard.
5. If you want to paste the selection onto a different picture, open that picture so that it is on the canvas.
6. On the **Edit** menu, click **Paste**.
   The selection becomes a new object on the **Stack**.

Note: If you paste the selection onto the same picture that you copied it from, the new object will be in the same position and may not look like a separate object. But the new object will be visible on the Stack, and you can use the object tool to move, resize, or rotate the new object.

More filters, more control

On the **Effects** menu, if you point to **Filters**, and then click **All Filters**, you will see the complete selection of filters available. You can also change advanced options and control settings such as filter transparency and pressure.

Using plug-in filters

In addition to over 200 standard filters in Digital Image, you can also use Photoshop-compatible plug-in filters, available from many third-party companies at retail stores and on the Web.

Filters

The term *filter* originates from the colored glass covers placed over a camera lens. The first filters in digital imaging sought to mimic the results of these physical camera filters, providing a slight shift in color, or increasing the intensity of colors. But the filters in Digital Image can create many other effects, from sharpening an image to making the picture look like a painting or a mosaic.

Three different filters were used on the original picture (upper left): The Colored Pencil filter (upper right), the Watercolor filter (lower left), and the Film Grain filter (lower right).

To apply a filter:

1. On the **Effects** menu, point to **Filters**, and then click a filter.

Filters create a whole new look for your pictures. Many filters make the image look less like a photograph and more like a drawing, painting, mosaic, or other hand-created artwork. Filter-enhanced pictures can become an attractive focal point of projects such as greeting cards and calendars.

Color Effects

You can give a picture a new look by applying a color effect. Turn a favorite color picture into an instant classic by changing it to black and white. Or, apply the antique effect, which "ages" your picture by giving it an old newspaper look. You can even turn it into a photographic negative.

To turn a color picture to black and white, antique, or negative:

1. On the **Effects** menu, click one of the following:
   - **Antique**
   - **Black and White**
   - **Negative**

Note: You can customize the exact appearance of your black-and-white picture using the Black and White Effects tool on the Effects menu. Use this when you want to take the time to change the overall tone of your picture to give it a colored hue (like Sepia, only based on any color—not just brown). You can also fine-tune the brightness and contrast of your black-and-white picture in this way.

Paint Effects

With the Freehand paint brush, you can choose from several painting tools:

- Paint brush
- Airbrush
- Pencil
- Eraser
- Highlighter
- Chalk

Use these tools to add new colors to a picture.

To use the Freehand paint brush:

1. On the **Effects** menu, point to **Paint Brush**, and then click **Freehand**.
2. Click a painting tool, and then click a color.
3. Click a brush size, and then paint by dragging on the picture.
4. Click **Done**.

You can paint with stamps to enliven your pictures with a rubber stamp effect. Choose from a variety of stamp designs or make your own. Paint with a single stamp design, or use multiple stamps on the same picture.

You can choose from a wide variety of stamps to customize any picture.

To paint with stamps:

1. On the **Effects** menu, point to **Paint Brush**, and then click **Stamps**.
2. Click a stamping style, and then click a stamp.
3. Click a stamp size, and then apply the stamp by clicking on the picture.
4. Click **Done**.

Cloning from a different layer

When using the clone brush, your starting point must be in the same object as where you want to paint. To clone from one object to another, first group the objects.

Clone Brush

The Clone brush is a sophisticated editing tool that allows you to paint with a sample from another part of the image. Unlike the Airbrush tool that paints in a solid color, the Clone Brush allows you to paint gradations of color or varied textures.

The Clone Brush works very well when touching up a face or an area of skin. For example, you can paint over a blemish with an area of clear skin copied from another part of the face or body. Similarly, you can use the Clone Brush to cover up distractions in the background of your picture. For example, you could paint over power lines with a matching gradient of color sampled from a clear area of the sky.

The original picture on the left contained some trees in the lower-right corner of the frame. The Clone Brush was used to cover the trees with a sample from a clear area of the sky.

To use the Clone Brush:

1. On the **Stack**, click the object you want to touch up.
2. On the **Touchup** menu, click **Clone Brush**.
3. Click a brush size.
4. On your picture, click the spot from which you want to copy. This spot—called the start position—is marked with a cross-hair while you paint.
5. Move the circular pointer to the position you want to paint over.
6. Drag the circular pointer to paint. As you paint, keep an eye on the cross-hair so that you don't copy unwanted areas.
7. Click **Done**.

Blending Brush

The Blending Brush works similarly to the Clone Brush, but can give you a more subtle, smoother effect. Like the Clone Brush, you select an area to sample from. But when the sampled area is applied to the new area, the colors are blended in with the colors of the surrounding area. The Blending Brush works very well for touching up skin.

For touching up skin, the Blending Brush lets you cover up blemishes with colors and patterns from clear areas of skin.

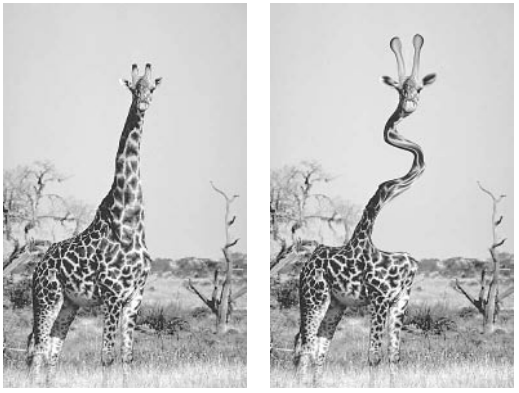
1. On the **Stack**, click the object you want to touch up.
2. On the **Touchup** menu, click **Blending Brush**.
3. Click a brush size.
4. On your picture, click the spot from which you want to copy. This spot—called the start position—is marked with a cross-hair while you paint.
5. Move the circular pointer to the position where you want to paint with the blending brush.
6. Drag the circular pointer to paint. As you paint, keep an eye on the cross-hair so that you don't copy unwanted areas.
7. Click **Done**.

Freeing up memory

The distortion brush requires a lot of computer memory, especially if you drag it across a wide area. To speed up the processing of the effect, try closing other applications you have running on your computer.

Distortion Brush

The Distortion Brush lets you smear, bulge, shrink, or erase part of the picture. When touching up a picture, you can use the Distortion Brush to diminish or accentuate certain features in the picture.



The Distortion Brush can be used to make some funny or whimsical images.

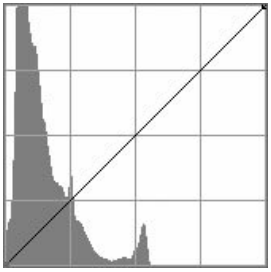
To use the Distortion Brush

1. On the **Stack**, click the object you want to touch up.
2. On the **Effects** menu, click **Distortion Brush**.
3. Click an effect, and then click a brush size.
4. Do one of the following:
   - Click on the picture to distort inside the circular brush area.
   - Drag on the picture to distort a wider area.
5. Click **Done**.

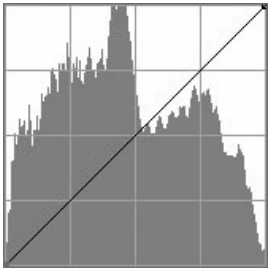
Using the Levels and Curves Tool

Lighting problems in some photos need more precise adjustment than can be achieved with any of the one-click auto fix tools. To achieve greater control, you can use the Levels and Curves tool, which includes a histogram. The *histogram* is a visual representation of the photo's *tonal range*, or the distribution of the pixels across the 256 degrees of brightness.

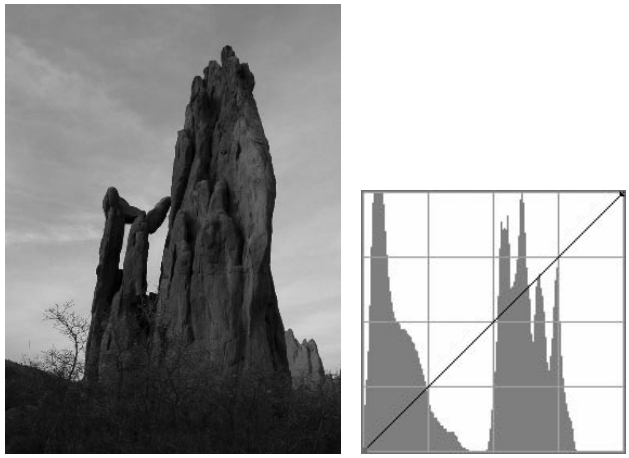
In the histogram, pictured below, the horizontal axis represents the range from the darkest pixels (shadows) on the left to the lightest pixels (highlights) on the right. For each point in the range along the horizontal axis, the height of the graph represents the number of pixels at that degree of brightness. The example below shows the histogram of a photo that has a concentration of pixels between the shadows and the midtones, with very few pixels at the lighter end of the range. An image with a histogram like this would look very dark and have poor contrast.



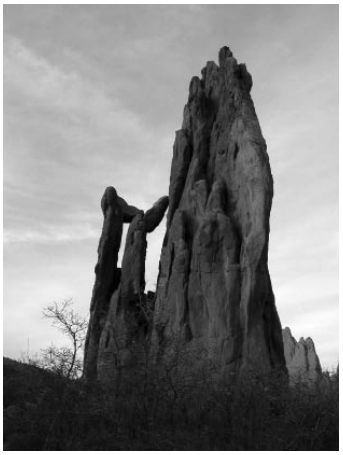
For most photos, it's best to have a fairly even distribution across the tonal range, so there is contrast between the light and dark areas. The following histogram example has the tones much more evenly distributed.

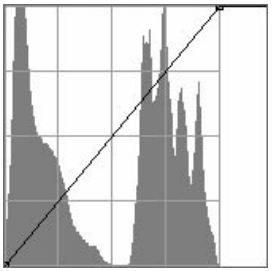


If you are not satisfied with the results of the automatic exposure adjustments, you can use the manual controls in the Levels and Curves tool for more precise control. This photo is a good candidate for using the Levels and Curves tool:



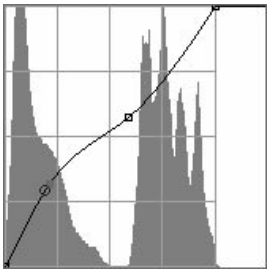
When you look at the histogram, you can see that the graph falls off sharply on the right end of the range. This means that there are no very light pixels in the photo. By adjusting the white point, you can broaden the tonal range to make the photo more dynamic. This is accomplished by dragging the white point slider to the first vertical rise in the graph.





These adjustments add greater contrast to the image by using a greater percentage of the 256 available tones.

Finally, this picture could be improved by increasing the brightness in the rock, which is in shadow. To do this, you can change the shape of the curve to make just the shadows of the picture brighter. Click the diagonal line about one-third of the way from the top to lock the highlights in place. Then click about one-third of the way from the bottom and drag it up to brighten the shadow and midtones. The final image looks like this:



To adjust levels using the Levels and Curves tool:

1. On the **Touchup** menu, click **Levels and Curves**.
2. Drag the **Black point** slider to the right until the vertical shadows bar on the histogram meets the first vertical rise of the graph.
3. Drag the **White point** slider to the left until the vertical highlights bar on the histogram meets the first vertical rise of the graph.
4. If the midtones need adjustment, do one of the following:
   - To lighten the midtones, drag the curve up and to the left.
   - To darken the midtones, drag the curve down and to the right.
5. To make lighting adjustments to a specific color channel, click one of the thumbnails and then use the levels and curves controls to make adjustments to that channel.
6. Click **Done**.

CHAPTER 7

Batch Editing in the Mini Lab

7 Batch Editing in Mini Lab

If you take pictures regularly, it can become time consuming to perform basic editing to all of your pictures after you download them from your camera. Mini Lab contains tools that can help you save time with routine editing that needs to be done to many or all of the photos in a batch.

If you have a high-capacity storage medium in your camera, you might have dozens, or even hundreds, of photos to download at once to your hard disk. Some of these pictures may be excellent "keepers" that you will want to spend some time editing carefully later on. But many of the photos only need a few quick edits: changes such as rotation and resizing.

Opening each photo individually, performing basic edits, and then saving each one could take a lot of time. Mini Lab lets you perform these routine editing tasks to many photos at once. Mini Lab lets you select multiple photos to perform numerous tasks, including:

- Color auto fix
- Exposure auto fix
- Camera phone auto fix
- Rotate
- Resize
- Print
- Save as (to save copies of the originals, change file format, and rename files)

Mini Lab displays all of your open photos, and includes a list of editing options that you can perform on multiple pictures. This diagram identifies the main features of Mini Lab.

1. The **Open more files** button opens the file browser to let you find more pictures to edit.
2. The editing options list shows all of the tasks available for batch editing.
3. File options let you save or print multiple photos.
4. The **Workspace** in Mini Lab contains thumbnails of all of your opened pictures.
5. The **Done** button closes Mini Lab, keeping the photos open and maintaining the changes you have made.
6. The **Cancel** button closes Mini Lab, undoing any unsaved changes.

To open Mini Lab from Digital Image:

1. On the **Touchup** menu, click **Batch Edit in Mini Lab**.

To open Mini Lab from the Library:

1. In the Thumbnail pane, select the pictures you want to edit.
2. On the **Tasks** menu, click **Batch Edit**.

When the Mini Lab starts, it automatically displays all pictures that were open in the program. Select the pictures you want to edit, and then click one or more editing tasks. The changes are applied automatically, but they are not saved unless you choose Save As in the Mini Lab or save your pictures in Digital Image after exiting the Mini Lab.

CHAPTER 8

Adding Edges, Mats, and Frames

When you've finished editing a photo, you can add polishing touches by surrounding it with an edge, a border, a mat, or a frame.

Edge Effects

Edge effects alter the outside edge of a photo. For portrait photos, try the soft edge effect. To draw attention to photos that you post on a Web site, try applying one of the highlighted edges.

The photo on the left has highlighted edges applied, which work great for photos on the Web and in e-mail. The photo on the right has been enhanced with soft edges.

To add an edge effect:

1. On the **Stack**, click the layer to which you want to add the edge effect.
2. On the **Effects** menu, point to **Edges**, and then click an edge effect or border.
3. If available, click a specific edge or border.
4. Follow the instructions on the screen to customize the size or color of the edge or border.
5. Click **Done**.

Shrinking a picture to show the edge effect

Some edge effects appear only behind and outside the picture. So if your picture reaches the edge of the canvas, you might not be able to see the edge effect when you print it or save it to the Web.

To make sure you can see an edge you've added, make sure the object is not locked to the canvas, and then the press the CTRL key while you drag in one of the photo's corner resize handles. This will shrink the photo proportionally on the canvas, so that the border lies within the printable area.

Choosing the right mat

When choosing a mat, consider the colors in your photo and the colors of your frame. A mat should not overpower the subject of the photo. Try selecting a soft-colored mat that matches one of the photo's secondary colors.

Mats and Frames

If you plan to put a photo in a traditional photo frame, you can add a Digital Image mat to your photo before you print it. Mats create an elegant effect, and can also help to fit an oddly-proportioned print to a standard-size frame.

If you don't plan to mount a photo in a traditional frame, but would like to print and display it, use a Digital Image frame instead. You can choose from a variety of frame themes to complement the subject of your photo. You can even add both a mat and a frame to the same photo.

Digital Image has a wide variety of mats and frames to finish your favorite photos.

To add a mat or a frame:

1. Select the picture or object to which you want to add a mat or frame.
2. On the **Effects** menu, point to **Edges**, and then click **Frames and Mats**.
3. Click a theme, click a design, and then click **Open**.
4. Drag your photo from the **Files** palette into the frame or mat, and then click **Next**.
5. Move or resize the photo so that it fits within the frame, and then click **Done**.

CHAPTER 9

Creating Projects

9 Creating Projects

A great way to present your pictures and share them with friends and family is to create photo projects. Digital Image offers a range of designs that you can use to showcase your pictures. Choose from greeting cards, calendars, business cards, and more.

Creating Photo Cards

Use your own photo to personalize a greeting card for a holiday, a party invitation, or any other occasion.

To open a photo card design:

1. Open a photo and check to see that it appears on the **Files** palette.
2. On the **File** menu, click **Create a Project**.
3. On the **All Types of Designs** page, click **Cards**.
4. Click **Photo Frame Cards**.
5. Click a theme, click a design, and then click **Open**.
6. Follow the instructions on the screen.
7. To edit the inside pages, on the **View** menu, click **Front of Card**, **Inside of Card**, or **Back of Card**.

Once your card project is open, you can add your own text, photos, and clip art. Since most printers cannot print to the edge of the page, the purple margins on the edges of a card project represent the unprintable areas of the card.

Photo cards are either half-fold cards, which are larger cards printed on both sides of the paper, or quarter-fold cards, which are smaller cards printed on only one side of the paper.

Working with a multi-page project

When working with a project that has more than one page (such as a greeting card), the multi-page palette appears on the bottom of the screen. This palette lets you switch between pages in the project.

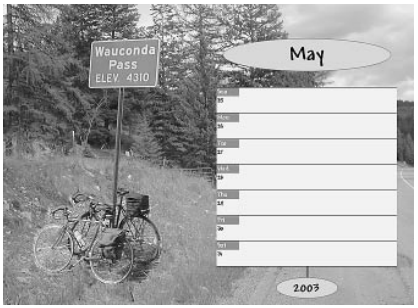
A favorite golfing photo was used to create this half-fold card.

To change the fold style of a card:

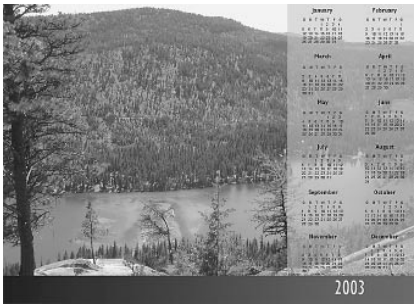
1. On the **Format** menu, click **Change Card Fold**.

Creating Calendars

Calendars are a great way to showcase your favorite photos. Calendar projects are available in the following formats:



A one-week calendar



A one-year calendar

A one-year calendar

These are the first three months of a 12-month calendar

To create a calendar project:

1. On the **File** menu, click **Create a Project**.
2. Click **Calendars**.
3. Click a calendar type.
4. Click a theme, click a design, and then click **Open**.
5. Set the start date for the calendar, and then click **Next**.
6. Follow the instructions on the screen to add a photo to your calendar, and then click **Next**.
7. Move or resize your photo on the calendar. Use the corner resize handles to resize the photo proportionally.
8. Click **Done**.

When you create a 12-month calendar, you can add different photos to each of the 12 month pages.

To complete a 12-month calendar:

1. Complete the instructions above to create a 12-month calendar.
2. Open the photos you want so that they appear in the **Files** palette.
3. Use the multi-page palette to switch between pages in the project.
4. Drag photos from the **Files** palette into each of the 12 month pages.

CHAPTER 10

Saving and Printing Pictures

Saving Pictures

If you're like most people, you can't stand to throw photos away, even if they're imperfect. You probably have a large box or two filled with envelopes of old negatives and photographic prints. Keeping track of all of your old prints and negatives can be a formidable task.

Fortunately, digital photography makes saving, storing, and organizing photos much easier. However, there are some important things you should know about saving your photos to make sure they'll be in good condition whenever you want to enjoy them.

Saving Multiple Versions

Once you've imported a photo from your camera to your computer and erased it from your camera, your computer's hard disk contains the only copy of that photo. This original version should be treated like a film negative: You don't want to do anything to it that will alter the original content. Except rotation to correct orientation or renaming the file, the original version should be left alone.

When you want to edit a photo or add it to a project, you should always save a copy of the original and work with the copy. That way, if you make some editing changes that you regret later, you can always go back to the original, make a new copy, and start over.

To make a copy of a picture:

1. Open the picture.
2. On the **File** menu, click **Save As**.
   The Save As dialog box opens.
3. Click the folder where you want to save the copy of the original.
4. In the **File name** box, enter a name for the copy.
5. Click **Save**.
   The Save As dialog box closes, with the new copy of the picture open in the workspace.

Choosing a File Format

Digital Image allows you to save photos in a number of image file formats. You can determine the best format for saving your photos based on what you will use the photos for, compatibility with other computers, and file size. To help you understand the difference between file formats, here are some important characteristics of three common image formats:

- **Digital Image PNG Plus (.png)** saves the individual objects in your photo projects so you can edit them later. PNG offers lossless compression, but not all computers have the software to open PNG files.
- **TIFF (.tif)** is a common format for cameras that produce lossless images. TIFF does not support layers, but is a good format for saving important photos, although the files are relatively large and take up a lot of space.
- **JPEG (.jpg)** is the most common format for images, since the files can be opened on practically any computer. JPEG does not support layers. Too much JPEG compression can reduce image quality, but JPEG is a format that makes relatively small files that work well for most purposes, especially for e-mail and the Web.

To save a photo in a specific file format:

1. On the **File** menu, click **Save As**.
   The Save As dialog box opens.
2. In the **Save as type** box, click a file type.
3. Click **Save**.

Setting PNG Plus Options

Only Digital Image can read individual objects saved in PNG Plus files. However, a PNG Plus file contains a flattened PNG version of the picture that can be read by many other programs, including Internet Explorer. By default, Digital Image saves the flattened version of the picture at the same size as the original, multi-object picture. But while this flattened version of the picture allows the file to be opened by other programs, it does increase overall file size.

If you don't need to have a full-size, flattened version of the picture embedded in each PNG Plus file, you can choose to save the flattened version of the picture at a smaller size. Limiting the dimensions of the embedded file can decrease the overall file size.

To limit the size of the embedded, flattened PNG file:

1. On the **Tools** menu, click **Options**.
2. Click **PNG Plus options**.
3. Click **No Larger Than**, and then enter values to limit the width and height.
4. Click **OK**, and then click **OK**.

Avoid sending large photos in e-mail

Sending high-resolution photos in e-mail may cause problems for your recipients. For example, a single 5-megabyte (MB), high-resolution image will take over 20 minutes to download on a 28.8-Kbps modem. Also, some e-mail programs limit the size of attachments, and may, for example, block e-mail with attachments larger than 1 MB.

Saving for E-mail and the Web

Unlike photos for printing, photos for e-mail and the Web work best if they are relatively low resolution. Low-resolution photos, such as one that is 440 x 330 pixels, move faster through dial-up modems, and they are the right dimensions for viewing on most computer monitors.

To save a photo for e-mail or the Web:

1. On the **File** menu, point to **Save a Copy For**, and then click **Save for E-mail or Web**.
2. Do one of the following:
   - Click a picture size
   - Set maximum dimensions
3. Click **Save As**.
   The Save As dialog box opens.
4. Click the folder to which you want to save the photo.
5. In the **File name** box, type a file name, and then click **Save**.

Printing Pictures

Printing Single Pictures

Digital Image has a simple process for printing single images. When using the single-picture printing task, one copy of the picture will print on the page, and the picture will be centered on the paper.

To print a single picture:

1. Make sure your printer is turned on and connected to your computer.
2. On the **File** menu, click **Print**.
3. Under Select a printer, click the printer you want to use.
4. To specify printer settings, click **Change printer settings**.
5. Select the number of copies, and then select a print size.
6. Click an orientation, and then click **Print**.

Printing from the Library

Digital Image Library uses the same printing tools as Digital Image. To start the print task, use the Thumbnail pane to select the picture or pictures that you want to print. Then, on the **File** menu, click **Print**.

Printing Multiple Pictures

Digital Image has a wide variety of templates that allow you to print multiple pictures on a page. You can print multiple copies of the same picture or multiple pictures together at the same time.

Printing on a multi-photo sheet saves paper and is a convenient way to create prints to give to family and friends.

To print multiple photos on the same page:

1. Make sure your printer is turned on and connected to your computer.
2. Open all the pictures that you want to print so that they are on the Files palette.
3. On the **File** menu, click **Print**.
4. Under **You can also**, click **Print multiple pictures or on special paper**.
5. Under **Select a printer**, click a printer.
6. To specify printer settings, click **Change printer settings**.
7. Select a category of page layout, and then click an orientation.
8. Click a layout in the right pane, and then click **Next**.
9. Drag pictures from the Files palette onto the layout.
10. Click an option for fitting the selected picture to the area, and then click **Next**.
11. Preview the page layout, and then enter the number of copies you want to print.
12. Click **Print**.

Selecting Print Quality

Most desktop printers are capable of printing in a range of qualities, from a low-quality draft mode to a high-quality setting that requires more time and uses more ink. Printer settings for quality and color vary, but you may be able to specify your paper type, ink type, dots per inch required, and color management preferences. Some printers have simplified printing options such as "Good," "Better," and "Best." Make sure to read your printer's manual to find out how to take advantage of these different settings.

To select print quality for your printer:

1. On the **File** menu, click **Print**.
2. Click **Change printer settings**.
   Your printer's dialog box opens.
3. Adjust your printer's quality settings, and then click **OK**.

Selecting a Print Size

The quality of photo prints is directly related to the number of pixels in the picture. A high-resolution picture contains a lot of detailed visual information, and can be printed at larger sizes. For example, a picture whose dimensions are 2048 x 1536 pixels (3.1-megapixels) would look good even when printed as large as 8" x 10" on most printers.

A low-resolution picture has less detailed visual information, and therefore cannot be printed in larger sizes. A picture with pixel dimensions of 1280 x 960, for example, lacks the detail needed to fill an 8" x 10" print. The result would be a grainy, pixelated image. But printing this picture at a smaller size, such as 4" x 6", would give you a sharp, detailed print.

As a general rule, try to print around 200 dots per inch (dpi). Take your picture's pixel dimensions and divide by 200 to see how large the print can be in inches.

Installing printer drivers

When adding a new printer, make sure that you install all the printer software and drivers. If you're installing an older printer, you may be able to find updated printer drivers on the manufacturer's Web site.

Turning on color management

Check your printer's manual to see if it offers color management. Color management can help your printer to produce colors that match the ones on your monitor. If your printer offers color management, click **Change picture settings** while performing the Print task. Your printer's dialog box will open, and you can adjust the settings for color management.

Choosing Photo Paper

If you want your images to look like traditional photographs, choose paper that is clearly labeled as photo paper. Photo paper comes in a range of thickness and texture. Paper weight ranges from ordinary office-document weight to a fairly heavy watercolor paper. If you choose a heavyweight paper, check your printer's manual to make sure that your printer can handle it.

The quality of the image will be affected by the kind of paper stock you choose. As a rule, you'll see the widest range of colors and get the deepest blacks from paper that has been specially coated to accept inkjet inks. The range of colors appears to be widest on the whitest papers. Glossy surfaces also create the illusion of deeper blacks. However, if you're going to display your prints, glossy surfaces can cheapen the look of the work, and surface glare can make the images more difficult to view.

Paper formulations also contribute greatly to resisting fading and color shifting. If you're using "fade-resistant" or "archival" inks, look for coated, acid-free papers that are also advertised as fade-resistant or archival.

Creating Long-lasting Prints

When buying supplies for your printer, check which types of ink and paper are recommended by the manufacturer of your printer, and find out about the ink's lifespan rating. Some six-color printers use inks specially formulated for long life. When printed on high-quality heavyweight matte paper, photos from these printers can last approximately 40 years before perceptible fading occurs.

Fade ratings are given as the amount of time before any color shift in the print can be seen by the naked eye. The actual time it would take for the print to become unacceptably discolored would be several times that. These ratings are based on indoor exhibition under glass in an atmosphere that is not chemically polluted. Ozone is especially harmful to dye-based printing inks. Do not display these prints in rooms where oxygen tanks or electric air fresheners are used—both produce high amounts of ozone.

Ordering Prints

Order prints of your photos online and have the prints sent to you or your family and friends. You can also use your photos to create a variety of photo gifts.

To order prints and enlargements:

1. On the **File** menu in Digital Image, click **Order Professional Prints**.
2. Your Web browser should display a photo printing page. On the Web, click **Order Prints**.
3. Follow the directions on this Web site to place your order for photo prints. The pictures will be uploaded to the photo printing site, processed, printed, and mailed to your home.

CHAPTER 11

Organizing and Finding Pictures in Digital Image Library

11 Organizing and Finding Pictures in Digital Image Library

Digital Image Library is a powerful tool that helps you organize, find, and archive your pictures and short videos. Digital Image Library does not store or make a copy of your pictures and videos. Instead, it stores information about your pictures and videos, including a thumbnail version of each picture, so you can conveniently organize and find them on your computer.

Digital Image Library automatically tracks information about each picture and video you add to the library, including the date the picture was taken, file size, image size, and the folder where the picture is stored. You can add labels, such as rating, keywords, or captions, to pictures and videos. Tools like the Label Painter and the Preview pane make it easy to add labels to an entire collection of pictures at one time.

Using the information you provide about each picture, Digital Image Library helps you locate your pictures and videos by using powerful filtering and grouping. Even if you have many pictures taken over several years, you can locate pictures that share the same keywords, dates, ratings, and more.

Digital Image Library also makes it easy to archive your pictures and videos on CDs or other media and copy pictures to CD so you can share them. Digital Image Library also allows you to make simple changes to multiple pictures at the same time, such as basic editing in the Mini Lab, rename, converting the file format, and batch resize.

Digital Image Library is just a catalog

Remember that Digital Image does not copy your pictures elsewhere on your computer; it simply creates a catalog of your pictures. Don't delete the original pictures in the My Pictures folder (or elsewhere), thinking that your pictures are stored in Digital Image. If you delete a picture from its original location on your computer, it will be deleted from Digital Image Library as well

Opening Digital Image Library

The Digital Image Library can be opened from the Windows Start menu or from the Digital Image Startup Window or File menu.

Adding Pictures from CDs or other removable media

You can use Digital Image Library to catalog pictures located on CDs or other removable media. To import these photos into the Library, click the **Import** button on the toolbar to launch the Import Pictures Wizard.

Adding Pictures and Videos to Digital Image Library

Any pictures and videos you have in your My Pictures and My Videos folders—and their subfolders—are automatically added to Digital Image Library's database. You can also add pictures and videos from other folders on your computer.

The first time that you open Digital Image Library, the **Welcome to Digital Image Library** window will open to help you add pictures and videos from folders other than the My Pictures and My Videos folders. After the first use of the Library, you use the same process to add additional pictures and videos to Digital Image Library.

To add pictures and videos from a folder on your computer:

1. On Digital Image Library's **File** menu, click **Add Pictures and Videos to Library**.
   The **Add Pictures and Videos to Library** window opens. The folders already cataloged in Digital Image Library are displayed.
2. Click **Browse**.
3. Navigate to the folder containing the items you want to add, click the folder, and then click **OK**.
4. Click **Done**.

Scanning for Pictures and Videos

Digital Image Library can scan your computer's hard disk drive to locate items to add to Digital Image Library. This feature is helpful if you have pictures and videos stored in multiple locations or if you don't remember where your pictures are stored. The scanning process can take some time if there are many picture files on your computer.

To scan for pictures and videos on your computer:

1. On Digital Image Library's **File** menu, click **Add Pictures and Videos to Library**.
   The Add Pictures and Videos to Library window opens. The folders already cataloged in Digital Image Library are displayed.
2. Click **Scan**.
3. In the **Beginning Picture Scan** dialog box, click **OK**.
   The hard disk drive is scanned, and the folders containing pictures are displayed.
4. Clear the check box next to any folder you don't want to add.
5. Click **OK**, and then click **Done**.

Use Digital Image Library for your videos, too

If your digital camera can capture movies in addition to still pictures, you can import, store, organize, and view those movies right along with your pictures. To view a video, double-click its thumbnail and it will play in the Library.

Adding Labels

Adding labels to your pictures and videos is one of the most powerful ways to organize and locate your pictures. Labels are bits of information that you apply to your pictures—information that helps to identify the pictures. Labels do not change the appearance of your pictures in any way; they are simply tiny bits of information that get stored in the Library and associated with your pictures and videos. There are a number of labels available in the Library, including the following:

- **People**. Create People labels for friends and family, then click that person's label to find all the pictures of that person.
- **Places**. Label your pictures with Places that help you instantly find photos you took last year in Hawaii or five years ago at the Grand Canyon.
- **Events**. Use these labels to identify pictures by activities or occasions, such as birthday parties or vacations.
- **Keywords**. You can turn any word or phrase into a keyword, making it easy to label pictures any way you like. You're not limited to the people, places, events, or keywords that come with Digital Image, since you can add your own.
- **Ratings**. With a click, you can rate your pictures on a scale of one to five. This can make it easy to find your best pictures.
- **Flags**. These little icons help you mark certain pictures for special reasons. You can add the To Print flag to pictures you want to print for a holiday greeting card, for instance.

Don't forget that you can create your own labels to identify the subjects of your pictures, and you can add multiple labels to each picture, or add the same label to multiple pictures.

In addition, labels can have hierarchy (sometimes referred to as *parent* or *child* labels). Imagine that you want to create labels to represent the members of your family. You might want to create a subcategory in People called Family and then add one label for each family member to that group.

Your labels can have sublabels. You can use this feature to help you organize your labels into logical groups.

The Label Painter is a fast way to add multiple labels to pictures in Digital Image Library.

Applying labels with the Label Painter

1. On the **Tools** menu, click **Label Painter**.
2. If desired, add a new label by right clicking where you want it to appear and clicking Create label. To create a label that is not a child of another label, right click on the category (People, Places, Events, or Keywords) that you want to place it in.
3. Click the label or labels you want apply to pictures. The label's checkbox is filled to show that it is ready to be painted onto pictures and videos.
4. Click the pictures you want to assign those labels to.
5. To close the Label Painter, click the close button on the Label Painter title bar.

Finding Your Pictures

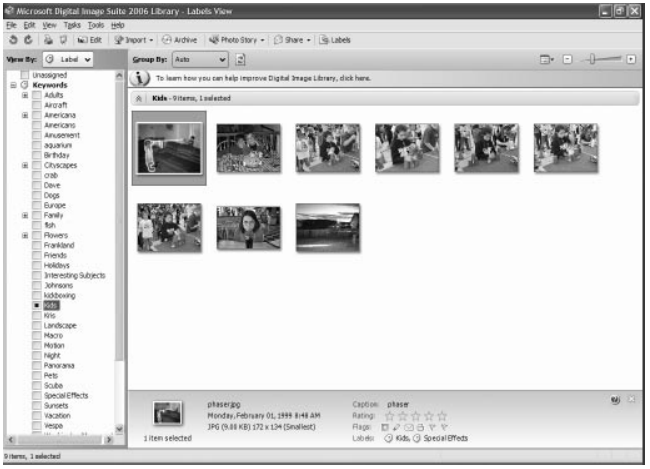
Once you have added your pictures to Digital Image Library and added some labels to your pictures, you can use the Library to quickly locate pictures or browse your photo collection by any criteria you choose.

The left pane of Digital Image Library is called the View By pane. The View By pane allows you to filter the pictures displayed in the Thumbnail pane.

If you are viewing by date or by folder, you can click the All Pictures and Videos View at the top of the View By pane, so that all of your pictures appear in the Thumbnail pane.

Viewing by Label

Viewing by labels is the most powerful way to use Digital Image and it might be the way you prefer to find and organize your pictures.



Use the View By pane to quickly find pictures with certain labels.

To view by label:

1. On the **View By** menu, click **Label**.
3. Click the labels that represent the pictures you are trying to find. Pictures with those labels appear in the Thumbnail pane.
4. To deselect a label, click the label to clear its check box.
5. To find pictures with no labels assigned, click the **Unassigned**.
6. To view all pictures regardless of labels, click **Folder** on the **View By** menu, and then click **All Pictures View**.

Viewing by Folder

Viewing by folder allows you to find your pictures based on where the pictures are stored on your computer. Remember, Digital Image Library does not actually store pictures, it just remembers where they are located. When viewing by folder, the folders shown mimic the folder structure on your computer. When you click a folder or drive in the View By pane, only pictures in that folder (and its subfolders) are displayed in the Thumbnail pane.

To filter by folder:

1. On the **View By** menu, click **Folder**.
2. In the folder structure, click a folder or drive.
   Pictures in that folder are displayed in the Thumbnail pane.
3. To view pictures from all folders and removable media, click **All Pictures View**.

Viewing by Date

Viewing by date allows you to filter your pictures based the dates the pictures were taken. You can set the filter to display pictures taken in a particular year, month, or even a single day. When you click a year, month, or date in the View By pane, only pictures taken during that timeframe are displayed in the main viewing area.

To filter by date:

1. On the **View By** menu, click **Date**.
2. Click a year to display the months within that year.
3. To display the days in a month, click a month.
4. To display the pictures from a particular day, click the day.
5. To view pictures from all dates, click **All Pictures View**.

Using the Thumbnail Slider

The thumbnail slider, in the upper right of the Thumbnail pane, allows you to change the size of the thumbnails. With larger thumbnails, you must scroll more to see all your pictures, but more detail is visible. With smaller thumbnails, you scan see more pictures at once.

You can adjust the size of the thumbnails in the Thumbnail Pane, but don't forget that you can see a large thumbnail just by holding the mouse pointer over a picture.

To use the thumbnail slider:

1. To increase the size of the thumbnails, do one of the following:
   - Drag the slider to the right.
   - Click the plus (+) button.
2. To decrease the size of the thumbnails, do one of the following:
   - Drag the slider to the left.
   - Click the minus (-) button.

Showing Thumbnail Data

There are three ways to view the thumbnails and their associated data in the Thumbnail pane.

Tiles View

Along with the thumbnail, the tiles view displays:

- Caption
- Time and date taken
- File size
- Image size (pixel dimensions)
- File name
- Rating

Thumbnails View

The thumbnails view displays only the thumbnail with no data.

Thumbnails with Text View

The *Thumbnails with text* view displays the thumbnail and the field that the pictures are arranged by.

To switch views in the Thumbnail pane:

1. On the **View** menu, click one of the following:
   - **Tiles**
   - **Thumbnails**
   - **Thumbnails with text**

Make a Photo Story

The Library includes a powerful program for turning your pictures into compelling video slideshows, complete with music, captions, and narration. To make your own Photo Stories, click Tasks and then click Create a Photo Story.

Grouping Your Pictures

You can group the pictures in the Thumbnail pane according to date, ratings, labels, or other information.

Grouping by rating, for example, will separate all the one-star pictures into one group, the two-star pictures into another group, and so on.

To group your pictures:

1. On the **Group By** menu above the Thumbnail pane, click a grouping option.

Showing the Table of Contents

You can open the table of contents, which is hidden by default, to list all of the groups currently in the Thumbnail pane. The table of contents is located along the left of the Thumbnail pane. To see the pictures of a particular set, just click the group in the table of contents.

To show the table of contents:

1. On the **View** menu, click **Table of Contents**.

Using the Preview Pane

The Preview pane, located under the Thumbnail pane, is a convenient way to view and edit information about a picture or pictures. The Preview pane displays the information about the pictures selected in the Thumbnail pane. You can click any of the fields (except file size and image size) in the Preview pane to edit the information.

To use the Preview pane:

1. In the Thumbnail pane, select the picture you want to preview. To select multiple pictures, press CTRL while you click the thumbnails.
2. Click one of the following fields:
   - **File name** will change the file name for all selected pictures. If more than one picture is selected, the file names will be the base name that you enter followed by a sequential number.
   - **Caption** will apply the caption that you enter to all selected pictures, replacing any previously associated captions.
   - **Date taken** will change the date taken field for all selected pictures, which is useful if your camera recorded incorrect dates. If the selected pictures have more than one date taken, this field will appear as **Date Range**.
   - **Labels** opens the Labels Editor to add new labels to the selected pictures; existing labels will not be deleted.
   - **Flags** displays convenient labels that you can use as personal reminders to edit, email, print, or perform other actions on indicated pictures.
   - **Rating** assigns a new rating to each selected picture, replacing any preexisting rating.

Showing the Preview pane

The Preview pane can be hidden from view to make more room in the Thumbnail pane. If the Preview pane is hidden, you can show it again by checking **Preview Pane** on the **View** menu.

Burning Pictures to Disc

Digital Image Library allows you to copy pictures and videos directly to CD so you can share them with other people or easily copy large quantities of images to another computer. Your computer needs to have a CD-RW drive in order to be able to burn pictures and videos to disc.

To burn pictures and videos to disc:

1. In the Thumbnail pane, select the pictures and videos that you want to copy to disc.
2. On the **Tasks** menu, click **Burn a Sharing Disc**.
3. Follow the steps in the Burn Pictures Wizard to copy the selected items to CD.

Archiving Pictures and Videos

One of Digital Image Library's most powerful features is the Archive Pictures and Videos Wizard. Archiving your picture files can prevent the files from being lost in the event of problems or damage to your computer's hard drive.

If you have limited hard drive space, archiving allows you to make more room on the hard drive by transferring pictures to CDs or other media.

Within Digital Image Library, you can set up reminders to archive your pictures and videos. You can set these reminders to occur on a regular basis, such as every month, or to occur after you have added a certain volume of picture files.

To set the archive reminder interval:

1. On the **Tools** menu, click **Options**.
2. Click the **Archive Settings** tab.
3. Under **Display the archive reminder**, click a reminder setting.

You can begin the Archive Pictures and Videos Wizard by clicking **Archive** when you see the Archive Reminder. Or, start the wizard at any time by clicking the **Archive** button on the Digital Image Library toolbar.

Once the Archive Pictures and Videos Wizard begins, you can choose from four archiving options:

- Pictures and videos never archived before and any modifications not archived.
- Pictures and videos never archived before.
- Pictures and videos selected when you entered the Archive Pictures and Videos Wizard.
- All pictures and videos in Digital Image Library.

The Archive Pictures and Videos Wizard will guide you through the archiving process, allowing you to select an archive location, archive friendly name, and other options.

Editing and File Management from Digital Image Library

With its powerful organizational tools, Digital Image Library is an easy way to locate pictures in your collection. Once you have found the pictures you want to work with, you can select those pictures for editing and file management.

Editing Pictures

From Digital Image Library, you can open pictures in a picture editing program, perform your editing tasks, and then return to Digital Image Library.

To edit pictures:

1. In the Thumbnail pane, select the pictures you want to edit.
2. On the **Tasks** menu, click **Edit**.
   The pictures open in the picture editing program.
3. Edit and save the pictures.
4. Close the picture editor.
   Thumbnails in Digital Image Library will be updated to show your changes.

By default, Digital Image Library will open the pictures to be edited in Digital Image. But you can set Digital Image Library to open a different photo editor.

To change the photo editor associated with Digital Image Library:

1. On the **Tools** menu, click **Options**.
2. Click the **General** tab.
3. Under **Change picture editor**, do one of the following:
   - Click **Use Microsoft Digital Image 2006 Editor**.
   - Click **Use a different picture editor**, and then locatethe picture editing program you want to use.

Editing in Mini Lab

Mini Lab allows you to perform the most common editing tasks to multiple pictures at the same time. Some of these tasks include:

- Color auto fix
- Contrast auto fix
- Rotate
- Crop

The Mini Lab you can access from Digital Image Library is the same Mini Lab you can access from Digital Image.

To batch edit pictures in Mini Lab:

1. In the Thumbnail pane, select the pictures you want to edit.
2. On the **Tasks** menu, click **Batch Edit in Mini Lab**.
   Mini Lab opens with the selected pictures.
3. For each batch-editing task, select the pictures you want to edit, and then click an editing option.
4. Click a file saving option. You must save the files for the Mini Lab changes to be saved.
5. Click **Done**.
   Mini Lab closes and thumbnails in Digital Image Library will be updated to show your changes.

Batch File Management

Digital Image Library has its own tools for batch file management. These tools include batch rename, batch convert file format, and batch resize. These file management options save you time when you need to perform the same task on multiple files.

To begin batch file management:

1. In the Thumbnail pane, select the pictures you want to manage.
2. On the **File** menu, click one of the following:
   - **Batch Rename**
   - **Batch Convert File Format**
   - **Batch Resize**
3. Follow the instructions on the screen.

CHAPTER 12

Taking Great Pictures

12 Taking Great Pictures

No matter how polished and creative you are as a photographer, Digital Image is a valuable tool for helping you get the most out of your pictures. With Digital Image features, you can easily correct common photo problems such as red eye and overexposure. And you can use features like filters and layers to create photos strikingly different from your originals.

Although Digital Image is a powerful photo-editing program, it's important to get the best photo you can at the time you take it. Digital Image can do a lot to correct minor problems with the originals, but certain problems, such as severely blurred or underexposed photos, cannot easily be fixed with computer software. And if you can develop your photography skills to take higher-quality photos, you can spend your time doing creative photo editing with Digital Image, rather than fixing avoidable mistakes.

Many cameras available today offer a high degree of automation: just turn the camera on and press the shutter, and the camera does the rest. While this approach is quick and easy, it isn't perfect in all situations. As a photographer, you can learn to fine-tune the settings on your camera to gain greater control of the camera to get the best possible photo for each situation.

Because of the range of cameras available—from basic point-and-shoot models to professional SLR (single-lens reflex) cameras—this chapter cannot cover specifics for all features available on all cameras. But it will provide a foundation of photography concepts that are vital to taking consistently good photographs.

The first section of this chapter contains information specific to digital cameras: concepts such as resolution and compression that don't have direct counterparts in film photography. Later sections cover universal photography concepts that apply to both film and digital cameras.

Opening photos from your digital camera

For information about opening pictures from your camera in Digital Image, see the digital camera section in the "Opening and Importing Pictures" chapter.

About Digital Cameras

If you're new to using digital cameras, several camera features might seem foreign to you. Some of these features, such as digital zoom and compression, do not exist with film cameras. But it's important to understand what these features do and when it's appropriate to use them.

Photo Quality

A digital photograph is composed of tiny colored squares called *pixels* (short for *picture elements*). Like a mosaic, the pixels blend together to form a picture. Each digital picture consists of a set number of pixels, ranging from a few thousand to millions. When a digital camera takes a photo, it creates a digital file that includes some number of pixels, each with a precise color.

Pixels are not a set size, so they can shrink or enlarge depending on the size at which the picture is printed or displayed. When a photo is enlarged too much, the individual pixels become visible, making a jagged looking, poor-quality photo.

The original photo on the left was saved at high resolution, and you can see sharp detail. The photo on the right has been saved at such low resolution that you can see the individual pixels.

The number of pixels that make up a picture is the *resolution*. Resolution and *compression* are key factors in determining the quality of a digital photo. The following sections explain resolution and compression.

Resolution

Resolution is one of the main factors that determine picture quality since it is a measure of the total number of pixels that make up a photograph. Resolution is sometimes expressed as the total number of pixels, such as 3 megapixels (3 million pixels), or in pixel dimensions, such as 1600 by 1200 pixels (which equals 1,920,000 total pixels, or 1.9 megapixels).

Resolution is important primarily because it determines how much you can enlarge a picture. Everything else being equal, a 3-megapixel picture and a 320 pixel x 240 pixel picture look the same in a wallet-size print. But if you enlarge those two pictures to 5" x 7" prints, the quality of the 320 x 240 picture is very low: you can see the individual pixels. The 3-megapixel picture still looks sharp at the larger size, since its pixels are still too small to be seen.

Resolution is also important because it determines file size. High-resolution pictures contain color information for many more pixels than low-resolution pictures, so the files for high-resolution pictures can be significantly larger. File size becomes an issue if you have limited storage on your camera or hard disk, or if you need to send the picture through e-mail.

The following chart gives an estimate of file size and maximum print size for various resolutions. The chart lists file sizes for JPEG format, which is a common (but not the only) format for pictures. This is just a general guide to file sizes—you might produce good printing results by using larger or smaller files.

Dimensions	Total pixels	Approx. JPEG file size (with slight compression*)	Maximum print size
320 x 240	76,800	23 KB	Web and e-mail
640 x 480	307,200	91 KB	Web and e-mail
1280 x 960	1,228,800 (1.2 megapixels)	363 KB	4" x 6"
1600 x 1200	1,920,000 (1.9 megapixels)	576 KB	5" x 7"
2,048 x 1,536	3,145,728 (3.1 megapixels)	970 KB	8" x 10"
3008 x 2000	6,016,000 (6 megapixels)	1.5 MB	11" x 14"

* Compression, which is explained in the following section, varies by camera, so you might find different file size results.

Megapixel rating

One of the main factors in the price of a digital camera is its megapixel rating. The megapixel rating indicates the maximum number of pixels (in millions) that are captured by the camera's image sensor.

Instead of film, a digital camera uses an *image sensor*—usually a CCD (charge-coupled device) or CMOS (complementary metal oxide semiconductor) chip—to capture the visual information when you take a picture. The image sensor on a simple, low-resolution camera might capture just over 76,000 pixels. The image sensor on a high-quality digital camera might capture more than 6 megapixels. As you can imagine, the 6-megapixel camera can produce very large, high-quality pictures (with very large files). The 76,000-pixel camera can capture a relatively small number of pixels, so photo quality would be fair to poor, even at small print sizes.

On many cameras, you can set the resolution at which the image sensor captures the picture. As a general rule, always use the highest resolution possible—you'll get higher-resolution pictures that you can print in larger sizes. However, in some cases you might want to lower the resolution so that the files will be smaller. This allows you to store more photos on the camera's storage media, but you must sacrifice some quality for quantity.

Make sure to check your camera's manual to find out what resolution you will get from the photo-quality settings on your camera. Beware of settings that offer "enhanced" or "interpolated" resolution. These features add extra pixels not found in the original photo to product a higher-resolution picture, but might reduce overall sharpness or quality.

Compression

You've seen one way to reduce picture file size: lower the picture resolution. You can also reduce file size by having the camera compress the picture file as it saves the file to the camera's memory. Compression consolidates similar information in the picture, and discards some information. With JPEG compression, for example, series of similarly colored pixels are grouped together and considered to be the same color. In the code that makes up the file, the color information for these grouped pixels only has to be listed once instead of hundreds, or even thousands, of times. This shortcut can reduce file size considerably. Taken to extremes, a picture in highly compressed JPEG format might be 95 percent smaller than the same photo in an uncompressed format.

Although compression does reduce file size, it also reduces visual quality. Slight to moderate compression might not noticeably reduce picture quality, but high compression produces visible areas of splotchy color called *artifacts*. Even with slight compression, artifacts become more pronounced each time the photo is resaved and compression is applied.

The left photo has been saved with lossless compression, so all of the image quality is retained. The photo on the right was saved with heavy JPEG compression—which is not lossless—and the compression significantly reduced the image quality.

For important pictures that you want to print, it's good practice to use little or no compression. Or, if your camera offers it, you can take your photos in a format, such as TIFF, that offers *lossless* compression. Lossless compression reduces file size, but retains all of the photo quality once the photo is restored.

File size and picture quality

Lowering resolution and increasing compression both reduce file size and picture quality. Bearing this in mind, you can use file size as a rough way to judge the overall visual quality.

File Formats

There are many file formats designed for digital pictures. Digital Image can work with JPEG, TIFF, RAW, and many other file formats. If your camera allows you to choose file formats for your pictures, you can decide which format to use based on your particular criteria: photo quality, file size, or compatibility with other programs.

The JPEG format is the most common format for photos. JPEG files are versatile, since they can accommodate over 16 million colors, can be compressed, and can be viewed on almost any computer and in any Web browser. To reduce file size, the JPEG format always uses compression, although the degree of compression varies by camera. Experiment with the compression settings on your camera to find a low-compression setting that produces good or excellent results. Because JPEG uses some compression every time a file is saved, many photo purists prefer formats like TIFF over JPEG.

The TIFF format provides an extremely accurate recording of digital-image data. Some cameras can use a lossless compression method with TIFF. But even with some compression, TIFF files are much larger than JPEG files for pictures with the same resolution. For example, a single uncompressed 5-megapixel TIFF image is larger than 10 MB. To work with pictures of that size, you need a lot of memory on your computer and a high-volume storage disk.

Using Zoom Features

A zoom lets you adjust the focal length of the lens, making your subject appear closer to or farther from the camera. Some cameras have built-in adjustable zoom lenses; others accommodate interchangeable zoom lenses of different focal lengths.

Digital cameras might offer *optical zoom* or *digital zoom*. An optical zoom feature uses the same principle as a zoom lens on a film camera: the lens itself moves to change the focal length. In any of the zoom positions, the resulting resolution is the same.

A digital zoom feature does not move the lens. Instead, the software inside the camera crops the photo to make the subject appear closer. Because the pixels are removed from the area that's cropped out, the overall resolution is lower. Many cameras offer a combination of optical and digital zoom. For best results, use only optical zoom. Then, if necessary, use Digital Image to crop the photo to enlarge part of the scene.

Both "digital zoom" and "enhanced resolution" features use *interpolation* to add pixels to the original photo, a process that increases the overall size or resolution. Interpolation assigns colors to the added pixels based on the colors of the surrounding pixels. While these features technically do increase the pixel count in a picture, they do not achieve the same visual quality as a picture that has not been interpolated. If your camera has digital zoom or enhanced resolution, test it and make sure you like the results before you use it for important pictures. For true zoom capability and highest image quality, use optical zoom.

Expand your perspective

Zoom lenses are great for capturing objects you can't get close to, such as a ship sailing in water far from the shore. Use a zoom lens to get close-up, candid shots of people without seeming intrusive or conspicuous.

Memory Cards, Disks, and Sticks

After the image sensor captures a picture in your digital camera, the digital information is stored on removable media, such as a CompactFlash, xD Card, Secure Digital card, Memory Stick, SmartMedia, Microdrive, floppy disk, or CD-R.

While you can still find digital cameras that store pictures on CD-R or floppy disk, such models are almost entirely overshadowed by cameras that use removable memory cards. Compared to removable memory, floppy disks and CDs are slow, bulky, and limited in capacity.

Memory cards are small, durable, and have almost unlimited reusability. And while higher capacity cards are always priced higher than lower capacity cards, storage technology advancements invariably lower price barriers.

Buying additional storage media, like these CompactFlash cards, allows you to take many more photos in a single session.

The size of your storage media dictates how many picture you can store. The media that is included with some cameras can only hold a few high-resolution pictures. This type of low-capacity card can be impractical for situations such as traveling. To give yourself more flexibility, you might want to purchase additional removable storage media.

Battery Life

Compared to film cameras, many digital cameras use batteries at a surprising rate. The LCD preview screen and the flash on the camera both put a heavy drain on the batteries. And unlike some manual film cameras, digital cameras cannot function without batteries or an AC power adapter.

To maximize the amount of time you can use your digital camera before the batteries fail, you can buy rechargeable batteries, which last longer than disposable alkaline batteries. Keep your spares charged so they'll be ready when you need them. If you are running low on power and don't have a spare battery, conserve remaining power by trying the following:

- Turn off your LCD screen and compose through the viewfinder.
- Turn off your flash so that it doesn't fire automatically. Turn the flash on only when you need it.
- Wait until you're home to preview your photos.

The best rechargeable batteries

Lithium-ion batteries and nickel metal hydride (NiMH) batteries both work very well with cameras, providing excellent power and convenience.

Upgrading your flash

If your camera supports an external flash, consider buying one, especially if you take a lot of indoor photos of people. An external flash will give you much more control and often better results.

The range of your flash

Check your camera's manual to find out the recommended range for your flash. Most on-camera flashes are designed to illuminate a subject that is 10 to 15 feet from the camera. If the flash is too close, your subject might look too bright or washed out in the photo. If you're too far away, the flash won't provide enough light.

Using the Flash

Learning to use the flash is one of the easiest ways to get better pictures both indoors and outdoors. Especially when you're photographing people, overpowering light from the flash can ruin the shot, often in ways that are difficult to correct with picture-editing software.

Most cameras come equipped with a built-in flash. The flash might be programmed to go off automatically when the camera senses that the flash is needed. But relying on the camera's judgment will not always give you the best results. Built-in flashes can create harsh shadows, overexposed areas, and unnatural-looking light.

Read your camera's manual to learn what the recommended flash range is, and to find out how to adjust different flash settings. Three of the most common flash settings are outlined in the following sections.

Automatic Flash

Contrary to what you might think, you might be better off without your flash in many situations. If you think the scene is too dark to take without a flash, try increasing the ambient light by turning on lamps or opening the drapes. On most digital cameras, you can increase the ISO equivalent setting, in effect making the image sensor more sensitive to the available light, which allows you to take pictures in low light without a flash.

Many newer cameras offer low-light modes and night-flash settings that improve the quality of low-light photos. If your camera offers these options, use them. Otherwise, always stay within the recommended range of the flash.

Red-Eye Reduction Flash

One of the most common problems with flash photos of people and pets is red eye. This problem is caused by a flash located very close to the camera lens. The light from the flash reflects off the blood vessels in the subject's retina, causing the pupils to look red. This problem occurs frequently in low-light situations, when pupils are likely to be dilated. There are several things you can do to help avoid red eyes in your photos:

- Increase the ambient light in the room. Turning on lights and opening up the drapes reduces the size of your subjects' pupils.
- Use your camera's red-eye reduction setting. This feature fires preflash bursts that help reduce the dilation of the pupils before the exposure.
- If you have an off-camera flash, move it away from the camera lens. Then, even if your subjects' pupils are dilated, the light comes from a different angle and reduces or eliminates the red-eye effect.

Fixing red eye with Digital Image

If you end up with red eyes in your pictures, Digital Image makes it very easy to remedy this problem. For more information, see the section about removing red eye in this book's "Basic Touchup" chapter.

Fill Flash

You can use the fill flash setting to fill in deep shadow areas caused by bright overhead light, or in a scene where the light is behind the subject.

In the left photo, the strong backlighting creates a shadow that covers the subject's whole face. For the photo on the right, fill flash was used to counteract the backlighting and keep the shadows off the subject's face.

If your flash is using the automatic setting, bright daylight can prevent it from firing. Turn on the flash manually, or, if your camera has a fill-flash setting, turn it on. If you see shadows on your subjects' faces as you're composing the shot, fill flash is a good idea.

An alternative to using the fill flash is moving to a different place where the light from the sun is diffuse and indirect, which produces a softer, more flattering portrait light.

Using Your Camera's Manual Settings

In today's camera marketplace, the lines between manual and automatic cameras have become blurred. It used to be that manual cameras were 35mm SLR (single-lens reflex) cameras with manual controls for focusing, aperture, shutter speed, and film speed. On the other end of the spectrum were fully automatic cameras with very limited controls, possibly only a shutter button.

For serious camera users, the manual SLR cameras were usually the best option, since they offered so much control. The creative process was not left to the automatic settings of a camera. Automatic point-and-shoot cameras were good for novice photographers who didn't want to worry about setting the camera controls. Many automatic cameras could produce adequate or even excellent photos without requiring knowledge of advanced photography concepts.

While you can still find fully automatic and fully manual cameras, many of today's cameras offer different modes for different degrees of automatic and manual control. For example, some SLR film cameras let you switch to an automatic mode where the camera determines everything from focusing to setting the aperture. Many compact digital cameras are designed to be used primarily in automatic mode, but also allow you to switch to program and manual modes to control exposure settings, like shutter speed and aperture.

With digital cameras, the adjustments that you make are often digital approximations of the equivalent function in film cameras, as with shutter speed or ISO. But the photographic result is the same. The following sections provide an overview of the most important manual camera settings and concepts.

Exposure

Exposure describes the amount of light that comes into your camera when you take a picture. Setting the camera to the correct exposure is crucial to getting the proper tones and colors in your pictures. *Overexposure* occurs when too much light has reached the image sensor (or film in a film camera), which decreases detail and causes the photo to look washed out. *Underexposure* occurs when insufficient light has been let into the camera, and the picture looks dim and murky.

Exposure is controlled by three factors: the *aperture*, the *shutter speed*, and the *ISO rating*. Aperture is the size of the opening that lets light into the camera. Shutter speed is how long light is allowed into the camera. ISO rating (the film speed in a film camera) is the sensor or film's sensitivity to light.

The water glass analogy

When taking a picture, your goal is to achieve a perfect exposure. To create the right exposure, you need to understand the relationship between the three exposure factors: aperture, shutter speed, and ISO rating. Achieving perfect exposure can be compared to filling a glass completely without spilling any of the water. For a perfect exposure, the glass should become completely full with no water spilling over. In this analogy, the tap symbolizes the aperture: the wider the tap is open, the faster the glass fills up. The time that the tap is open represents the shutter speed: leaving it open longer lets more water into the glass. To fill the glass to exactly the right level, the rate of flow must be set according to the time the tap is open.

The third factor, ISO rating, can be equated to the size of the water glass. A smaller glass, representing a faster ISO rating, fills up more quickly than a larger glass, representing a slow ISO.

Understanding automatic exposure

As a photographer, you will come across a wide range of lighting conditions, and each condition requires that you adjust your camera to different exposure settings. For example, taking a photo on a beach on a sunny day calls for different exposure settings than you would use on the same beach on a cloudy day.

For many conditions, the camera's automatic exposure setting gives you good or even excellent results. But for some situations, the automatic exposure does not perform as well.

Automatic exposure assumes that the scene you are photographing has a few bright spots, many midtones, and a few dark areas. As the camera's meter reads the available light in your scene, it averages the light in the bright, middle, and dark areas, and then calculates the exposure necessary to bring the average level to a tone of medium brightness called *middle gray*.

Automatic exposure does not work well if your scene is dominated by large sections of very light or very dark colors. A bright field of snow, for example, has so much bright light that the automatic exposure lowers the brightness until the snow looks gray. To work around this shortcoming, you can use *exposure compensation*.

Exposure Compensation

Some cameras have an exposure compensation feature that lets you manually override the automatic exposure setting. Exposure compensation lets you adjust the exposure with settings such as +2, +1, -1, and -2. A +1 setting, for example, tells the camera's automatic exposure system to make the middle tones brighter. When taking a picture dominated by bright snow, increasing the exposure with the +1 setting might correct the light level for the snow-filled scene. Your actual results will vary according to your camera and the brightness of the day.

With bright snow in a scene, setting your camera's exposure compensation setting to +1 or +2 might help you to get the right exposure.

Increasing your chances with bracketing

If you're not sure what the best exposure setting is, try bracketing. Bracketing involves taking multiple photos of the same scene. Start by using the automatic exposure, and then use exposure compensation to take additional frames with increased and decreased exposure levels. With a series of photos taken at different settings, there is a good chance that one has perfect exposure.

Program modes

If your camera offers program modes for specific types of pictures such as portraits or action shots, read your camera's manual to find out the aperture settings used for those modes.

Aperture

The *aperture* is the opening through which light passes to reach the film, or, in digital cameras, the image sensor. Aperture is measured by *f*-number, where a specific setting is called an *f-stop*. With *f*-stops, a low number, such as *f*/4, represents a wider opening that lets in more light. A small aperture, such as *f*/16, lets in significantly less light.

Some cameras have a fixed aperture that can't be adjusted. If you're adjusting the aperture yourself, a setting of *f*/8 is a good place to start, since it gives you a fairly wide zone of sharpness.

If your camera allows you to adjust the aperture, use the settings to regulate the *depth of field* in your picture. Depth of field refers to the zone in your photo that is in acceptably sharp focus. A wide aperture gives you a shallow depth of field, while a small aperture allows a very deep zone—maybe even everything in the picture—to be in focus.

Imagine pointing your camera down a set of railroad tracks which go all the way to the horizon. With a wide aperture, like *f*/2.8, if you focus on a railroad tie a short distance away, only a few of the other ties are in sharp focus. With a narrow aperture, like *f*/22, many more of the ties are in focus, even those quite a distance from your main focal point.

A wide aperture will give you a short depth of field, as illustrated in the photo on the left, where only the eagle is in focus. The photo on the right was taken with a small aperture, so almost everything is in focus.

For portrait photography, a wide aperture helps to limit the focus. Your subject's face is clear and sharp, but objects in the background are blurred. But if you're taking a vacation photo of someone posing in front of a monument, a narrow aperture might be in order. With the narrow aperture, both the person and the monument can be in focus in the same photo.

Of course, adjusting the aperture also affects how much light is let into the camera. But if a specific depth of field is important for your shot, you might want to switch to manual mode, set the aperture, and then set the shutter speed to get the correct exposure level. Some cameras also offer an *aperture priority mode* that automatically selects the correct shutter speed to produce the correct exposure for the aperture you select.

Shutter Speed

In most cameras, the shutter is the curtain in front of the film or image sensor that is retracted for a precise amount of time to let light into the camera. Shutter speed can be adjusted to let light into the camera for a longer or shorter amount of time.

When determining the correct exposure for a picture, both shutter speed and aperture must be considered in relation to each other. An increase in shutter speed, which lessens the time the film is exposed to light, requires that you widen the aperture to let in more light.

Shutter speeds are measured in fractions of seconds. In automatic mode, many cameras will use a shutter speed of about 1/125th of a second. For action photography, a very fast shutter speed, like 1/500th of a second, can help to stop action and reduce blurring caused by movement of your subject.

The shutter speed determines whether you freeze the action or show motion blur

On the other extreme, you might set the shutter to stay open for four seconds, or even more for low-light night photography without a flash. But shutter speeds slower than 1/30th of a second increase the likelihood that slight movements in your hand while you take the shot will cause a blurred photo. To avoid camera shake, mount your camera on a tripod or other firm surface for slow shutter speeds.

To accommodate the low light of this twilight scene, the camera was mounted on a tripod and set to a slow shutter speed.

Some cameras offer a *shutter priority mode* that sets the aperture automatically after you set the shutter speed. This can be useful if you're in a situation where shutter speed is more important than aperture, like when you're photographing a subject in motion.

ASA versus ISO

If you have an older camera, the film speed dial might be labeled ASA instead of ISO. These film speed ratings are the same, and the ratings are interchangeable.

Avoid sharpening pictures that have noise

Do not use the sharpen feature in Digital Image on digital photos with noticeable noise; sharpening accentuates the inaccurate pixels.

ISO Setting or Equivalent

When taking pictures on film, you have the opportunity to select different types of film for specific uses. Films are available in different *speeds* that are more sensitive or less sensitive to light.

The film speed is measured by ISO number. A high-speed film, such as ISO 800, is ideal for low-light situations or action photography, since the film requires less light to properly expose the photo. Slow-speed films, such as ISO 100 or ISO 200, are good for photographing in bright daylight, since they require a lot of light. If you plan on using the same roll of film for multiple settings and light levels, ISO 400 film is a good compromise and does relatively well in most situations.

Faster films generally produce grainier pictures than lower-speed films. Some of the newer varieties of professional grade high-speed films produce a finer grain structure, which is less noticeable.

Since digital cameras use an image sensor instead of film, there is no way to actually change the film speed. However, many digital cameras provide the digital equivalent of an ISO. Sometimes called the *sensitivity setting*, this feature, in effect, allows you to change the ISO setting. For example, if you are in a low-light situation, you can switch from ISO 100 to ISO 400.

With most digital cameras, setting the digital equivalent of the ISO setting to a faster speed can introduce noise into the picture. Similar to the graininess from high-ISO film, noise is pixels of random color that mar the picture. Cameras vary widely, so you should experiment with your digital camera's ISO settings and examine the results.

In low-light situations, consider turning off the flash and setting the camera to a faster ISO setting. This might produce some noise in the picture. But that result might be preferable to what you'd get by taking the photo at slower ISO setting with the harsh lighting of the on-camera flash.

Setting the White Balance

Surprisingly, digital cameras do not automatically know what colors are your picture. Instead, your camera must figure out which color in a scene is white, and use that information to color the rest of the picture. This is called setting the *white balance*. To calculate the white balance, the camera assumes the lightest spot in the picture is white, and adjusts the other colors accordingly. Under most circumstances, this automatic function should prevent an off-color cast in your photos.

However, in some lighting conditions, the camera fails to correctly set the white balance. If you're taking pictures indoors, for example, incandescent lights give off a yellowish or reddish glow. This color is not really visible to the naked eye, but often shows up in indoor pictures. To counteract this problem, most digital cameras have preprogrammed color balance settings that compensate for different kinds of light. Typical settings include cloudy, shaded, incandescent, flash, fluorescent, and sunny. These settings compensate for the different colors of light likely to be present in those conditions, and should produce pictures that require little or no color correction. Read your camera's manual to find out about specific white balance settings it offers.

With film cameras, there is no way the camera itself can compensate for different lighting conditions. But there are two ways you can compensate for the colored light:

- Use film designed for specific lighting situations. Tungsten-balanced films, for example, help to neutralize the color of tungsten or halogen illumination.
- Use a filter on your camera lens. For example, if you're using daylight-balanced film but want to take pictures indoors, you can use a blue-colored filter to absorb the overriding yellows and reds of the indoor incandescent lights.

Correcting tint in Digital Image

If your picture has a colored cast from a light source, correct the problem with the Color and Saturation tool.

Setting the white balance manually

Some digital cameras offer manual white balance control. This feature allows you to set the white balance by focusing on a pure white object, such as a piece of paper, and then locking down the white balance before you take the photo.

Using Automatic Modes on Your Camera

Many of the automatic cameras sold today—even some of the less-expensive models—have pre-programmed modes that are designed for special situations. Sometimes called *program modes*, these modes automatically adjust your camera to special settings designed specifically for things like macro photography, action shots, portraits, panoramic mode, or picture series.

If you're a beginning photographer who is not always confident enough to adjust your camera's manual settings, use the automatic modes to help you take better pictures.

If your camera does not allow you to adjust settings manually, the automatic modes might produce the most successful pictures in these situations.

The following sections describe the most common automatic modes available on many digital and film cameras. Since the type and implementation of automatic modes vary for each camera, read your camera's manual for availability and usage instructions.

Macro Mode

Most cameras in automatic mode have trouble focusing on objects that are less than 12 inches (30 centimeters) away. So when you're taking up-close pictures, for example, capturing a special piece from your coin collection, you need to set your camera to *macro mode*. Macro mode adjusts the focal length to accommodate the unusually short distance to the subject.

Macro mode usually reduces aperture, which widens the depth of field, and increases the chances that the whole subject is in focus.

The camera's macro mode was used to capture the fine detail of the jewelry.

When using macro mode, make sure to turn off the flash, since the flash does not provide proper illumination at such close range. Tripods are a good way to keep the camera steady for a close-up shot. If you don't have a tripod, set the camera on a firm surface, focus the picture, and then activate the shutter with the self-timer.

Action Mode

If you're photographing subjects such as athletes, moving cars, or even fast-moving children, a camera's action mode helps keep your subject in focus. The most significant characteristic of action mode is the faster shutter speed of at least 1/500th of a second, which helps to freeze the action of your moving subject. The action mode in most cameras also uses a wider aperture setting (to offset the fast shutter speed), and multipattern light metering, which compensates for overly bright and overly dark areas.

Action mode uses a fast shutter speed to freeze the action of a fast-moving subject.

When the lag is a drag

Some digital cameras have a much shorter shutter lag than others. You might want to consider this factor when buying your next camera.

Digital cameras create a unique challenge for action photography: the time lag between when you press the shutter button and the actual exposure. With film cameras, pressing the shutter button causes the shutter to open virtually simultaneously. But some digital cameras are much slower and you might have to wait as long as a second before the picture is taken. When photographing moving objects, one second can seem like an eternity.

One way to compensate for the shutter lag is to anticipate your shot. Imagine you are photographing a runner with a camera that has a lengthy shutter lag. (The shutter lag will not be highlighted on the camera's packaging, but you can figure it out through your own experience.) First, focus your camera on a spot that the runner will cross in about 10 seconds. When the runner is approximately one second away from your target spot, press the shutter button. The exposure should occur just as the runner comes into your field of focus.

Another way to photograph a moving subject is to pan your camera with the action. While a stop-action photo freezes everything in the photo, panning your camera keeps your moving subject in focus, but blurs the background. For this effect, you do not want to use the action mode, because you do not want a fast shutter speed. To accomplish this effect, follow your moving subject in the viewfinder (or LCD screen) as it moves, but pan the camera so that your subject remains in the same position in the frame. Your result won't show the subject in as clear a focus as stop action, but the blurred background helps to pronounce the speed and movement of your subject.

Since the camera panned with the subject, the girl is in fairly sharp focus and the background is blurred. This helps convey movement.

Showing the whole series

Digital Image offers Flipbook animations as a creative way to present a series of pictures in sequence.

Burst Mode

Burst mode is a feature that allows you to take a series of pictures in quick succession. Many cameras include a burst mode that allows you to take a series of pictures in quick succession, such as 3 frames per second for up to five seconds.

Even on digital cameras with slow shutter lags, the burst mode still allows you to take many frames in a short time span. The burst feature uses a *buffer* to temporarily hold the information from the image sensor. After the maximum number of frames is stored in the buffer, the camera processes each frame separately and sends them to the removable storage media.

If your camera has a burst mode feature, you can use it to overcome the slowness of the shutter lag. When photographing a child, for example, it can be hard to get the child to pay attention for the few seconds that it takes to take the picture. But with burst mode, you might be able to shoot 10 frames within 10 seconds. During those 10 seconds, you can encourage the child to talk, look at the camera, and make different movements and expressions. It's doubtful that all 10 exposures will turn out to be great pictures, but you're much more likely to get at least one good shot than if you'd just taken a single frame.

Another great use of the burst mode feature is to take an action sequence. Create a series of pictures of a golf swing, a child riding a bike, or a pet moving across the yard. Then you can assemble the whole series in a slide show, or mount the pictures together in a frame.

Portrait Mode

For portraits and candid shots, using your camera's portrait mode is a convenient way to get good results. Portrait mode is set to use a relatively wide aperture, creating a shallow depth of field. With only your subject in focus, objects in the background are less distracting, and your subject dominates the frame.

With a shallow depth of field, it's crucial that you get your subject in sharp focus. If your depth of field is so short that you can't focus on every part of your subject at the same time, focus on the subject's eyes, and let hands and feet be in less focus.

For this portrait, the Diffuse Glow filter was applied in Digital Image to soften the focus.

For successful portraits, remember to fill the frame, and use a medium telephoto lens (around 105mm, or zoomed about halfway between wide angle and maximum telephoto). Keep the background very simple, unless you are using objects in the background as context for your subject. If you are taking pictures indoors, an off-camera flash or other light source works best.

Reduces wrinkles and blemishes!

The Diffuse Glow filter available in Digital Image works well when applied to portrait photographs. The filter simulates the effect of using a soft diffusion filter on your camera, softening the photo and minimizing your subject's wrinkles or blemishes.

Relaxing your subject

An important aspect of portrait photography is to get your subject relaxed and comfortable for the pose. Try using conversation or other pleasant distractions to get your subject's mind away from the camera.

Making Panoramas with Digital Image

Even if your camera doesn't have a panorama feature, you can make your own panoramas by shooting a series of overlapping pictures and automatically combining them using the Panoramic Stitch tool.

Panoramic Mode

For landscapes, large groups of people, and other long horizontal shots, a camera's panoramic mode helps you compose the picture without too much sky or ground in the photo. Panoramic shots have a different *aspect ratio* than standard shots, meaning the width of the frame is proportionally much greater than in a picture with a standard aspect ratio.

Some panoramic cameras take pictures with an aspect ratio of 4:11 (four units tall by 11 units wide), compared to the aspect ratio of 3:4 for standard shots on most digital cameras. As with the shape of a movie theater screen versus a television screen, the wider frame gives you some new creative territory when composing your photo.

Switching your camera to panoramic mode gives you new compositional possibilities.

True panoramic cameras use a wide-angle lens to let you capture more width of the scene by staying in the same position. Many cameras, including digital cameras and APS cameras, offer a panoramic mode without a wide-angle lens. Instead, the panoramic effect is achieved by simply cropping off the top and bottom of the frame. This type of panoramic shot does give you a wider aspect ratio, but not a wider angle. On some digital cameras, using the panoramic mode means that each photo has fewer pixels (since the top and bottom are cropped), so each panoramic shot takes up less space on your storage media.

Using the Self-Timer

Many digital cameras, even inexpensive ones, come with a self-timer feature. Some self-timers open the shutter after a preset amount of time, such as 10 seconds; others allow you to adjust the length of time before the shutter fires. Either way, this fairly simple feature is great for getting yourself into a photo and taking long exposure shots.

Getting Yourself into a Picture

To get yourself into a picture, plan where you want to position yourself for the shot. Then set up the camera by putting it on a tripod, a table, or any other flat, stable surface. With your camera in position, focus the camera on your subject, which should be close to the position where you will stand for the picture.

If your camera has autofocus, press the shutter halfway down to focus, press the self-timer button, and then press the shutter all the way down. Then you've got about 10 seconds to get yourself in position for the shot.

Taking Long Exposure Shots

Another great use of the self-timer is for exposures with a relatively slow shutter speed. For speeds slower than 1/30th of a second, there is a good chance the slight movements in your hands will cause blurriness in your picture. Even if you have very steady hands, the slight movement of your finger pressing the shutter button can create movement. Using the self-timer will eliminate this problem. By setting the camera on a tripod or firm surface and using the timer, your hands don't have to be anywhere near the camera while the shutter is open.

Creating a makeshift tripod

If you're outdoors, try propping the camera on a rock or car roof. Then fine-tune the positioning by putting the camera on a jacket or other object that you can shape to adjust the camera angle.

Ten Tips for Great Pictures

The following 10 tips offer suggestions for developing your photography approach, technique, composition, and habits. If you are an inexperienced photographer, some of these tips might be new ideas for you. If you're a photography veteran, these tips might be a good reminder of things you haven't heard in a while.

1. Know Your Gear

Having command of your equipment is an important aspect of enjoying and being successful with photography. As you get to know your gear and gain confidence in a camera's capabilities, the camera can become an extension of yourself. When you have reached this level of competence, you can concentrate more on the creative aspects of photography.

When you get a new camera, read the manual. With digital cameras especially, operating the controls might not be intuitive, since many digital cameras' controls must be accessed through menus on the LCD screen.

After you've read the manual and understand how and when to use your camera's features, go out and take a variety of pictures using the different settings. Take some pictures outdoors and indoors, with the flash and without the flash, with automatic settings and with manual settings. As you take pictures, take notes to record the settings used for each picture. Later, look at your photos and take note of both the settings that worked well and the settings that produced poor results.

Missing a great photo because you get hung up on technical issues is frustrating. Spend time getting to know your gear and prepare for great photo opportunities.

2. Nail the Exposure

In a finished photo, exposure is something that you usually only notice when it is wrong. A perfect exposure is not something that jumps out at you, but a problem exposure definitely stands out. In an overexposed picture (caused by too much light), the shadow areas are light, and the highlighted areas are almost entirely white. In an underexposed picture, too little light has been let into the camera, creating a photo that lacks detail, with filled-in shadow areas and dull highlighted areas.

Special lighting situations can fool the built-in light meter in your camera. If you want to start with the camera's automatic exposure, use *exposure compensation* to fine-tune the exposure. The following list describes some common lighting problems and the recommended exposure compensation for each:

- For a side-lit subject: Increase exposure by one-half of a stop.
- For a backlit subject: Increase the exposure by one stop. Or step in close and meter directly on the subject, step back and recompose, and then take the picture at the reading you took on the subject. You can also switch to spot metering.
- For a small dark subject against a bright background, or any subject in a very bright scene: Use exposure compensation of +1 to +3, or increase exposure by one to two stops, for example, from *f*/8 to *f*/5.6 or *f*/4.5.
- For a small, light subject against a dark background: Use exposure compensation of -1, or decrease exposure by one stop, for example, from *f*/8 to *f*/11.

Planning for the imperfect

Learning to nail the exposure takes a lot of experience, and no one gets it right with every shot. If you suspect the lighting might make it difficult to get the correct exposure, you can increase your chances of success by bracketing, as explained in tip #7.

3. Capture a Moment in the Story

Consider driver's license and passport photos. We think of these as uninteresting and unrepresentative of how people usually look. Why are these photos dull?

One problem with these photos (but certainly not the only problem) is that they capture people out of their element, without context or a story. There are no interesting details in the background to draw in the viewer, and the subject often looks impatient or uncomfortable.

When you are the photographer, you can strive to capture people, events, and places that tell a story. In addition to having your subject look natural and not posed, details in front of the subject or in the background can stimulate the imagination to re-create the story of the photo.

This photo captures the destruction of an earthquake just hours after the event. Since the photo was taken before the rubble was cleared away, the photographer was able to capture the many details of the scene that tell the story.

With enough of these details, and a strong relationship between your subject and the other elements, the photo can suggest ideas that are not even in the frame. You can take the old cliché "A picture paints a thousand words," and make it your goal to paint more than a thousand words with your photographs.

4. Look for the Light

Many of the best pictures are taken early in the morning, late in the afternoon, and at twilight. At these times the lighting is most dramatic.

Many pictures are shot in bright or moderately bright sunlight. This type of light produces photos that closely match the way we remember seeing the scene. That is part of the reason we respond to them with a positive sense of familiarity.

However, colors photographed in the cooler light at twilight or in overcast conditions, or in the warmer light of sunrise and sunset, offer a new perspective on familiar colors and subjects, and provide a more creative backdrop for photographs. Overcast and after-the-rain conditions, in particular, produce richer, more saturated colors. For example, red leaves photographed against a twilight backdrop, instead of in daylight, create a moody interpretation that suggests a sense of mystery or drama.

For interior pictures, look for strong sources of natural light, as from a window or a skylight. The glow of light coming from one direction can illuminate your subject dramatically.

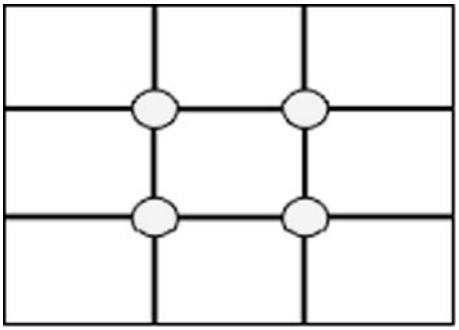
Recomposing a photo with Digital Image

After a picture has been transferred to your computer, use the crop tool in Digital Image to change the composition. By clipping away the edges of the picture, you can reposition your subject to comply with the rule of thirds.

5. Follow the Rule of Thirds

When composing a photograph, many beginning photographers always center their subject directly in the middle of the frame. While this technique might be the easiest way to get the subject in focus with a point-and-shoot camera, it is not always the most interesting way to present the subject.

Most advanced photographers follow the *rule of thirds* when composing the space inside a picture frame. The rule of thirds divides the frame into thirds both horizontally and vertically, and places the point of interest on one of the four spots where these dividing lines intersect. The rule of thirds is used throughout the graphic design world, because it helps to create balance between the subject and the background.



To apply the rule of thirds, divide your scene into three sections horizontally and vertically. Place the focal point of your photo on one of the intersections of the dividing lines.

Following the rule of thirds, the bicycle in this photo lies on the points where the dividing lines intersect. The top of the dock also roughly follows the horizontal line that runs one-third down from the top of the frame.

If you have a person or animal in your picture, you can place the subject's face on one of the four points, looking toward the center of the scene. If the horizon is in a picture, it should run about one-third from the top or one-third from the bottom, depending on whether the terrain or the sky is the center of focus.

The rule of thirds is not an absolute law, and there have been many great pictures taken that don't abide by it. But the rule can be a great way to add balance and interest to your pictures.

6. Find a Unique Perspective

You can challenge yourself to take original pictures that convey unique perspectives. Rather than just pressing your shutter button as soon as you have the urge to capture a scene, take some time to assess your camera angle, proximity to your subject, and background elements. You might transform your composition by taking one or more of the following simple steps:

- Get closer to your subject, to show more detail and eliminate distractions in the background.
- Include just a portion of your subject in the frame.
- Take your original subject and place it in the background. Find a new subject that adds context to the object in the background.
- Get lower to the ground, and point the camera up toward your subject.
- Move to a higher location, above your subject, so you are pointing down when you take the photo.

For example, if you are traveling, your natural instinct might be to take straightforward pictures of local monuments. But with this approach, you might wind up with the same lackluster pictures taken by scores of other tourists before you. And there would be a good chance that a nearby souvenir shop would sell superior, professionally photographed prints and slides of the same monuments. For that matter, you could have just stayed home and ordered the professional photos from a catalog.

Use your imagination to compose some original, creative photos that you won't find anywhere else. Capture some of the local color by photographing a lively food vendor stationed near the monument, and the monument can be the backdrop in your frame. Or use the self-timer to capture you and your companion sampling the local fare that you've bought from the food vendor in front of the monument.

7. Bracket

The term *bracket* means to create exposures that are both lighter and darker than the camera or light meter indicates. The idea is to second guess the purely mechanical exposure meter, so that you get the right exposure.

If you're taking photos of a sunset, a scenic vista, or a plant, you have the time to bracket. With these subjects, you're also likely to have a wider range of tones to record than your camera can handle, especially if your subject is brightly lit.

So how do you bracket with an automatic camera? Most digital cameras, and many automatic cameras, have an exposure compensation feature, sometimes called the *EV setting*. If you set the exposure compensation for -1, the shot is one stop underexposed (darker than normal). If you set the camera for +1, the shot is one stop overexposed (lighter than normal). So you can bracket by taking three pictures, one each at the -1, 0, and +1 settings.

Some cameras offer an automatic feature, which takes a range of photos, each with a different exposure setting.

Even if your camera doesn't permit you that much control (or if you don't want to take the time to change the exposure settings), another technique will give you results similar to bracketing. To get a lighter exposure, aim your camera at a darker portion of the subject, and then press the shutter button partway down (until you begin to feel a little resistance). Next, without releasing pressure on the shutter button, reframe your photo to include what you want, and then push the shutter button all the way down to take the photo.

This technique will only work if pressing the shutter button halfway down locks in the exposure, so you might want to check your camera's manual to be sure. You will also need to set the exposure on an object that is roughly the same distance away from the camera as the subject. Otherwise, your subject will not be in focus when you take the picture.

8. Analyze and Try Again

Photography takes practice. And you will progress at a faster rate if some of your practice time is focused on developing specific skills. One way to do that is to analyze your pictures and then take them again.

When you get a chance to look at your pictures on a computer or as prints, you can assess their quality of composition, lighting, exposure, and white balance. Upon close inspection, you might realize that you placed your subject too close to the center of the frame, or that incandescent lights caused an orange glow. The next time you're taking pictures, take this same photo again, and make adjustments for the problems you encountered before.

When you look at the results of your second round of pictures, you might find that you got excellent results, or you might find that one of your adjustments disrupted something else in the photo. Or maybe the different lighting conditions of the different day made it more difficult to nail the exposure.

To continue the exercise, photograph the same subject or scene on a regular basis. You must always compensate for the differences in lighting each day, but you can try new approaches to the composition. Learning to photograph the same subject under different conditions or with a different approach gives you valuable experience and ideas when you encounter new situations.

A quick check with the LCD

One of the benefits of digital photography is that you can get a look at your photos on the LCD preview screen right after you've taken the shot. This feature is great for a quick analysis of the photo's composition, exposure, and color tone. Because the preview screen is so small, however, it often does not reveal problems with focus.

9. Take Pictures Every Day

To become a talented and confident photographer, make photography part of your daily routine. Fortunately, digital cameras have made it much more convenient and inexpensive to take lots and lots of pictures. Once you've purchased your digital camera, you can take as many photos as you want. The only cost is for batteries and storage for your pictures.

The more you practice, the more confident you'll become in your skills and in your equipment. You'll also develop the habit of keeping your camera close by, and having it ready for photo opportunities. Train yourself to look for these opportunities, and take advantage of them when they come to you. Some of the world's most memorable pictures were taken by amateur photographers who happened to be in the right place at the right time. So to be ready to take that once-in-a-lifetime shot, know how to use your gear, have your equipment handy, and be on the lookout for great photo material.

10. Show Your Pictures to Other People

Even when you are making great progress with your photography skills, it's easy to overlook the shortcomings in your own work. To continue improving your abilities, show your photos to other people. Getting others' opinions is an invaluable learning experience.

Good pictures should be visually exciting to people, eliciting a "Wow, this is great!" response. If you find that people are not very excited by your photos, ask them what they think is missing, and what you could do to make them better. You'll be surprised what some people like and do not like about your pictures.

Find other photographers in your community. You can look at each others' work and give feedback. This kind of mutually beneficial arrangement also helps you to develop your critical eye.

While it's important to show your photos to others, remember that you are the ultimate judge of your own work. Photography is an art and, as an artist, you should establish your own voice and style. You don't have to listen to every piece of advice, and you might produce your best work by taking chances and following your own instincts.

That said, photographs are made to be seen! As you improve you photography skills, showing off your photos can be the best part.

CHAPTER 13

Successful Scanning

13 Successful Scanning

A scanner is a useful tool for your digital photography projects. A scanner generates a digital picture from any kind of flat object—a document, a photo, pages from a book, a leaf—which you can then manipulate on your computer. Even if you take all of your pictures in digital format, scanners allow you to digitize things such as old photos, pages from books, negatives, and slides. Once scanned, the digital pictures are rich raw material that can be edited, incorporated into composites, printed, or posted on the Web.

Scanning with Digital Image

For information about using your scanner with Digital Image, see the scanner section in the "Opening and Importing Pictures" chapter.

Types of Scanners

If you're thinking about buying a scanner, consider the two primary types that are available for working with photographs. *Flatbed scanners* convert photographic prints or other flat opaque objects into digital files. *Film scanners* convert film negatives or 35mm slides into digital files.

Quick multi-page scanning

If you plan to scan multi-page documents, look for a scanner with an automatic document feeder (ADF), which can save you a lot of time on bigger scanning jobs.

Flatbed Scanners

For general-purpose scanning, a flatbed scanner gives you the most flexibility. You can scan virtually any two-dimensional object: photographic prints, text documents, kids' crayon drawings, even objects like leaves and feathers. If you have a flatbed scanner, you can buy a *transparency adapter*, an accessory that allows you to scan slides, negatives, and transparencies.

Flatbed scanners with transparency adapters scan at lower resolutions than dedicated film scanners. However, flatbed scanners are usually adequate for occasional scanning of snapshots or amateur photos. If you plan to scan only prints and other flat artwork, a 1200-dpi (dots per inch) flatbed scanner should meet your needs. More information about scanner resolution and dpi is available in the section later in this chapter titled "Setting Resolution and Bit Depth."

Automatic dust and scratch removal

Some high-end film scanners include automatic dust- and scratch-removal software. This option can save a great deal of time later, eliminating the need to fix most defects.

Film Scanners

If you need to scan negatives or slides on a regular basis, a film scanner is the best option for the sharpest high-resolution results. Film scanners generally have higher resolutions than flatbed scanners, producing images at 2,000 or even 4,000 dpi. Since slides and negatives are so much smaller than photographic prints, it's crucial to be able to scan at a high resolution, especially if you plan to make larger-size prints from the scans. If you scan a slide at low resolution, you'll have relatively few pixels to work with, limiting you to making small prints of the scans.

If you don't have a scanner that accepts film, you can pay a photo lab to scan your best negatives or slides onto a CD-ROM. Negatives and slides can be scanned to sizes suitable for making large, high-quality prints. Paying for scanning services can be expensive, so if you have a lot of slides or negatives, you'll save money by buying a suitable scanner.

Preparing Pictures for Scanning

The single biggest problem with scanning is poor scans caused by contaminants, such as lint, dust, or other specks on your photos or flatbed scanner's glass plate. Some of these particles are barely visible before the scan, but become noticeable spots in the final image. You can remove these spots with Digital Image, but eliminating the contaminants before scanning is much faster and more effective.

You should regularly clean a flatbed scanner's plate with an antistatic cloth, which neutralizes static electricity that attracts tiny particles. Dedicated film scanners are more complex and can be difficult to clean, so follow the manufacturer's suggestions before you try cleaning the inside of a film scanner.

Make sure that your original image is also spotless. You should clean prints, slides, and negatives with an antistatic brush, which is specially treated to repel dust and dirt. You can find antistatic products at a well-stocked camera store, or by searching the Web. Antistatic accessories are far more effective at removing dust than other products are. Cleaning with compressed air, for example, may remove all visible dust, but leave behind small particles that might show up in the digital image.

Installing your scanner

When you install a new scanner, carefully follow the instructions that accompanied the device. Usually, you need to install the software before connecting the scanner to the computer. Also, it's usually a good idea to restart your computer after installing the software, even if the setup guide doesn't instruct you to.

Setting Resolution and Bit Depth

When scanning a photo or other artwork, consider what you want to do with the image file. Just as you would when taking photos with a digital camera, you'll need to weigh the benefits of image quality versus file size.

Resolution, usually expressed in dpi (dots per inch) with scanners, is the main factor to consider. For superior images that will make large, exhibition-quality prints, consider scanning at the highest dpi available. However, scanning large images at such a high resolution can make very large files, which might be a concern if you lack sufficient random access memory (RAM) or hard disk space.

For scanning everyday prints that you do not plan to enlarge or crop, you might want to set your scanner to scan at a lower resolution. Scanning at 300 dpi should give adequate results for images that you want to print. For images that you want to send in e-mail or post to the Web, 72 dpi is sufficient. Just remember that if you plan to crop or enlarge, you will need more pixels to work with, so you should increase your scanning resolution accordingly.

Many scanners allow you to adjust the *bit depth* (sometimes called *color depth*). Bit depth is the range of colors the scanner is able to capture per pixel. Scanner bit depths range anywhere from 24-bit on older models to 48-bit on some newer models. A high bit depth ensures that the scanner captures the wide range of colors in your photos.

Setting the bit depth higher than 24-bit may make image files larger than necessary. Most image-editing programs (including Digital Image) cannot work with a bit depth higher than 24-bit. If you scan an image at the 32-bit setting, and then open it in Digital Image, the photo is converted to 24-bit automatically. The 24-bit level supports 16.7 million distinct colors, which is usually more than adequate.

Scanning Large Pictures

Scanning a large picture at high resolution requires a lot of RAM, or memory, on your computer. The larger a picture is, the longer it takes to scan and the more memory your computer requires to open it. If you are having trouble scanning a large picture, try the following:

- Scan at a lower resolution. If you don't plan to crop or enlarge the image, 300 dpi should be sufficient.
- Scan a smaller portion of the picture. See your scanner's documentation for specifics on how to crop and scan only part of a picture.
- Close programs that you're not using to make more memory available for the scanning task.

Adding RAM for faster scans

If you repeatedly have trouble scanning larger images, you might want to consider adding more RAM to your computer. At least 256 MB of RAM is recommended. Adding RAM can be fairly inexpensive. Depending on the configuration of your system, you might be able to increase performance by upgrading to 512 MB or even 1 GB of RAM.

Five Tips for Buying the Right Scanner

When buying a scanner, consider these factors to find a model that suits your needs.

1. Get the Best Resolution You Can

A flatbed scanner's optical resolution (the number of pixels that a scanner "sees") includes two numbers, such as 1200 x 2400 dpi. The first number is the most meaningful, and the most useful when comparison shopping. The first number indicates the number of lines the scanner can see vertically, which is the highest resolution the scanner can achieve before interpolating (generating extra pixels). The higher the resolution the scanner can achieve before it interpolates, the better the resulting scan.

2. Look for USB Connections

Most modern scanners offer USB (Universal Serial Bus) connectivity, which makes them easier to connect to computers, but not all USB ports are the same. If your computer supports USB 2.0, you should consider using a USB 2.0 scanner, since it will transfer pictures to the computer many times faster than older USB 1.1 connections. If your computer does not have a USB 2.0 port, consider adding one (this is inexpensive to do). Some scanners also support FireWire (IEEE 1394) connectivity, which is faster than USB1.1 but requires a FireWire connection on your computer.

3. Check the Dynamic Range

Dynamic range (or *D-range*) refers to a scale of brightness values from pure white to black. Dynamic range is indicated with a number from 0 to 4, with a larger number indicating a wider range. A scanner with a wide dynamic range:

- Captures more detail in bright areas of an image.
- Differentiates between various shades of black.
- Creates less digital noise (pixels with inaccurate color information) in shadow areas.

If you want a scanner for digitizing prints, a D-range of 2.3 is adequate. But if you plan to scan negatives, you need a scanner with a range of at least 3. For the best results from slides, consider a scanner with a D-range of 3.4 or higher.

4. Scan by the Batch

If you're considering a dedicated film scanner, check out models that allow you to load a batch of negatives instead of loading them one at a time. Batch scanning can save a lot of time.

5. Be Realistic About Scanning Speed

When reviewing the specs for various scanners, remember this: The quoted scanning speeds are always optimistic and usually represent scanning at a low resolution or low image quality. Expect much longer actual scan times, especially for high quality pictures. Use the specs only for comparison purposes.

Five Tips for Successful Scanning

1. Keep Your Scanner and Originals Clean

Dust or lint on the scanner glass or on a photo will be picked up by the scanner. An antistatic brush does a good job of clearing away even tiny particles that you can't see.

2. Preview and Correct the Scan

Scanner driver software generally allows you to adjust color, contrast, highlights, shadows, and other factors. Most scanner programs offer an automatic enhancing feature that might improve brightness, contrast, and color balance. Preview your scan after using that control. If it seems perfect, you might be ready for the final scan. However, think about cropping in the preview to scan only the part of the picture that you need. This helps keep the digital file size to a minimum.

3. Scan at a High Resolution

Any scanner can be used for quickly digitizing photos into small, low-resolution files. These are fine for online display or other Internet use. High-resolution scanners can produce much larger image files, a valuable feature for making or ordering oversized prints.

4. Choose the TIFF Format

Save any scanned image in TIFF format, as opposed to JPEG format. JPEG format compresses files to a small digital footprint, but you lose information every time you edit and resave a file. The TIFF format does not discard any information, and also supports more color data. If you have limited hard-disk capacity, you can transfer large TIFF files to a CD-RW disc, and then delete them from your computer.

Lossless compression

Digital Image can save files in TIFF format using a compression type called LZW, which makes image files slightly smaller without losing any data.

5. Convert Large TIFF Files to JPEG

If you've scanned a high-resolution picture in TIFF format, the file may be too large to upload to the Web in a reasonable amount of time. Open the file in Digital Image and save it with slight compression. The compressed copy may be small enough to upload quickly enough.

CHAPTER 14

Optimizing Your Monitor for Pictures

14 Optimizing Your Monitor for Pictures

When working with digital photos on your computer, you rely on the monitor to accurately display a photo's colors, brightness, and contrast. But just how accurate is your monitor? Unless you have recently *calibrated* your monitor (that is, configured the monitor to display colors correctly), it might not be displaying accurate colors. Even though the monitor can display digital information, it is ultimately an analog (that is, nondigital) device and occasionally needs adjustment. If your monitor is not properly adjusted, any changes you make could actually make a picture look worse when it's printed or displayed on a different monitor.

Imagine a monitor whose brightness level is too dim. When you view a perfectly corrected picture on that monitor, the brightness level appears too low. You could use Digital Image or other software to manually adjust the picture's brightness to a level that looks good to your eye. But when you print that picture or send it to a friend to view on another computer, the image appears too bright, since your adjustments compensated for the inaccuracies of your monitor. To avoid this problem, you should adjust and calibrate your monitor so that it is accurate and optimized for viewing and printing pictures.

Setting Screen Resolution

Screen resolution is the setting that determines the level of detail displayed on your monitor. A screen resolution of 800 × 600 pixels is usually the lowest resolution available. But you can adjust screen resolution to show a higher level of detail. When using Digital Image, a higher screen resolution lets you see more of your photos in the workspace; less of the screen is covered by elements like the Stack and the Files palette.

The best screen resolution for a computer system depends on the limitations of your monitor, the capabilities of your video adapter, and your personal preference. You can experiment with different screen resolutions to find the one that works best for you.

To change the screen resolution on Windows 98, Windows Millennium Edition, or Windows NT 4.0:

1. On the **Tools** menu in Digital Image, click **Display Settings**.
2. Click the **Settings** tab.
3. Under **Screen area**, move the slider to change the screen resolution, and then click **OK**.
4. If prompted, restart your computer.

Expanding your workspace

If you have an older or small monitor, the default setting may be 800 × 600 pixels. Increasing the screen resolution increases the size of the Digital Image workspace.

For more information

For more information about changing display settings, see your Windows documentation.

Adjusting your monitor's controls

Refer to your monitor's documentation for instructions for adjusting the monitor's viewable area.

To change the screen resolution on Windows XP:

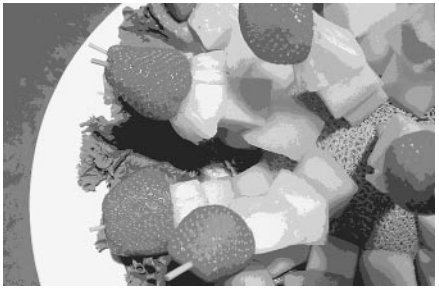
1. On the **Tools menu** in Digital Image, click **Display Settings**.
2. Under **Screen resolution**, move the slider to change the screen resolution, and then click **OK**.
3. If prompted, restart your computer.

When you adjust the screen resolution, you might notice that the viewable area becomes off center, too narrow, or too short. To center or expand the viewable area on the screen, use the monitor controls. These controls are usually located on the front of the monitor directly below the screen. The controls can adjust the width and height of the screen directly, or, on many models, the controls open a graphical control screen with menu commands.

Setting Monitor Color Quality

The monitor *color quality* setting affects the number of colors the monitor is capable of displaying. When viewing pictures, it's optimal to have a high-color quality setting, such as 24- or 32-bit color.

With a low-color quality setting, such as 8-bit (256 colors), a monitor cannot display all of the colors found in most pictures. Such a display setting badly renders a picture containing a section of gradient color, such as a sky that becomes brighter toward the horizon. The color transition from dark to light appears uneven and jagged, because the monitor cannot display the fine variations in color.



A monitor with a low-quality color setting cannot show the complete range of colors found in most photographs.

Increasing the color quality setting on your monitor can significantly improve the way pictures look on your screen. As with the screen resolution, color quality adjustments might be limited by your monitor type or video adapter.

To change the color settings on Windows 98, Windows Millennium Edition, or Windows NT 4.0:

1. On the **Tools** menu in Digital Image, click **Display Settings**.
2. Click the **Settings** tab.
3. Under **Colors**, click a color quality, and then click **OK**.
4. If prompted, restart your computer.

To change the color settings in Windows XP:

1. On the **Tools** menu in Digital Image, click **Display Settings**.
2. Click the **Settings** tab.
3. Under **Color quality**, click a color quality, and then click **OK**.
4. If prompted, restart your computer.

Color quality in Windows XP

If your computer is running Windows XP, the default color quality setting is at least 16-bit color.

How many colors do you need?

Some monitors allow you to adjust the color quality to 32-bit, but that level might be higher than you need. Digital Image and most other image-editing programs convert 32-bit images to 24-bit color. But with more than 16 million colors, the 24-bit setting is adequate for most circumstances.

Adjusting the video adapter

Some video adapters allow you to make adjustments to brightness, contrast, and RGB values through the video adapter dialog box.

Let your ink dry before calibrating

Some printer inks change color slightly during the drying process, which can take as much as eight hours. If this is the case with your printer, let the print dry overnight before calibrating your monitor.

Calibrating for Brightness, Contrast, and RGB Values

When you adjust screen resolution and color quality, you are telling your computer's *video adapter* how to send the signals to the monitor. But to adjust brightness, contrast, and RGB (red, green, and blue) values, you make the adjustments on the monitor itself using the monitor's controls. These controls are usually located on the front of the monitor directly below the screen.

The monitor's controls can make adjustments directly, or, on many models, the controls open a graphical control screen with menu commands. If you get stuck, check your monitor's manual for instructions for making these adjustments.

The simplest way to calibrate your monitor is to print photos, and then adjust your monitor to match the prints.

To perform a simple monitor calibration:

1. Make sure that there is no bright light or reflective glare on your monitor screen.
2. Set your monitor's brightness and contrast controls at exactly the halfway point. Do not reset these controls until specified in this procedure.
3. Open a picture in Digital Image that's familiar to you, preferably an image with skin tones and a large area of medium gray.
4. Follow the instructions in your printer manual for printing a picture at the best quality. If your printer allows, choose RGB as the printing method.
5. When the ink has thoroughly dried on the print, place it next to the image on the monitor.
6. Use the brightness, contrast, and RGB controls on your monitor to make the image on the monitor look as close to the print as possible.

Repeat this process each time you change printer settings, printing inks, paper type, or printing resolution, since all of these variables can affect your printing output. Also note the changes for each combination of variables.

The simple monitor calibration described above assumes that the printer is calibrated correctly. This assumption is fine if you always view your pictures on the same monitor and print on the same printer. But when you upload your pictures to a Web site for printing, or if you send your pictures to be viewed or printed on other computers, you might find that the colors are not accurate.

For greater color accuracy, you might want to invest in specialized calibration instruments and color management software. Available in camera shops and on the Web, calibration tools help you get precise calibration for your monitor, so you can generate pictures that look equally good on other systems.

Controlling Ambient Light

After you've gone through the trouble of calibrating your monitor, you can also regulate the lighting in the room where you use your computer. In different lighting situations, the same picture on the same monitor might look very different. Sunlight, fluorescent light, and incandescent light all affect how your eyes perceive the light coming from the monitor. To achieve consistent results, make sure that you have the same amount and type of ambient light in the room when you calibrate your monitor and use Digital Image to adjust your pictures for brightness, contrast, and color.

Preserving your settings

If you share your computer with other people, you might want cover your monitor's controls with tape to keep them in place after you've calibrated the monitor. Tape might help the settings from being unintentionally changed. Just don't make it impossible to change them when you need to.

Decrease light for best results

If you're working in a room with bright ambient light, the picture on your monitor will seem to be less vivid and have less contrast, especially on flat panel monitors or laptop computers.

CHAPTER 15

Digital Photography Tips & Tricks

15 Digital Photography Tips & Tricks

In this section, we've selected some of the best articles from the digital photography section of MSN Photos. If you enjoy the articles here, check MSN regularly for additional articles, news about the latest gear, and photo tips for seasonal photography and holidays.

How Photo Savvy Are You?

Online Mini-Course on Photography Basics

Knowing the basics of photography is the key to getting the kind of pictures you want. For a quick review of the basics, take this quiz and test your photographic mettle.

When was the last time you found yourself "in over your head" during a discussion about photography? For most casual and occasional snapshooters, the answer may be "every time the subject of photography comes up." Most people don't want to think about the technical details of making pictures until they begin tossing more images into the trash than they paste into the "brag book." This is when many people realize that they need know at least the basics of cameras and photography to get consistently good pictures.

Maybe you had an introduction to photographic concepts at some point along the way, but the fine points have faded over time.

Whichever camp you fall into, now's a good time to see how photo-savvy you are. Just take the following quiz by matching the term to the correct definition. Don't worry if you don't already know the fine points of exposure. The answers give you the basic information, and, at the end of the quiz, you'll learn how all of the elements combine to create good exposures, and how you can use them creatively.

What is ISO?

a) An abbreviation for Industry Standard Optics that determine the resolution of your camera's lens.
b) I am clueless. Should I care?
c) It indicates how sensitive the film is to light.

Correct answer: C. ISO and ISO equivalent settings on digital cameras are numbers that indicate the film's or digital image sensor's sensitivity to light. In other words, the amount of light required to make an accurate exposure. The higher the ISO number, the more sensitive the film or sensor is to light, or the less light will be needed to make a picture.

The ISO rating is encoded on film canisters. Most film cameras automatically read the code and automatically set the ISO for you.

The ISO sequence runs as 20, 25, 32, 40, 50, 64, 80, 100, 125, 160, 200, 250, 320, 400 and so on up to 6400, although not all of these ratings are currently in use. An easy way to think about ISO is to know that ISO 200 film (or the equivalent digital setting) is twice as sensitive to light as the ISO 100 setting. If you use ISO 200, the film or image sensor requires half as much light to make an exposure as ISO 100 film. Photographers refer to film or ISO settings as being slow (under ISO 200), fast (ISO 400 to 800), and very fast (over ISO 800).

Films in the ISO 50 to 100 range are very slow, or they are the least sensitive to light. Hence, they require a long exposure, or a "slow shutter speed," to produce a well-exposed image. For example, on a gray, overcast day using ISO 50 film, you may need to use a 1/8 sec. shutter speed to photograph a landscape at f/16.

Examples of very fast film include those with an ISO of 1600 and 3200. Because these films and settings are very sensitive to light, they require shorter exposure times, or a faster shutter speed. On the same overcast day, you could switch to ISO 1600 film and take the same landscape picture at f/16 with a shutter speed of 1/250th sec.

Trivia The ISO numeric rating scale was established by the International Organization for Standardization, which combined the older DIN, ASA/ANSI systems for international use.

When you're using a fast film, you or the camera can select fast shutter speeds that reduce the risk of a blurred image caused by subject motion. This also allows you to make sharp pictures in low-light situations while hand-holding the camera. During the short exposure time, blur from movement does not have time to register in the image.

On manual and older film cameras, you set the ISO using a ring or dial on the camera. On digital cameras, you can set the ISO equivalent setting using an electronic menu.

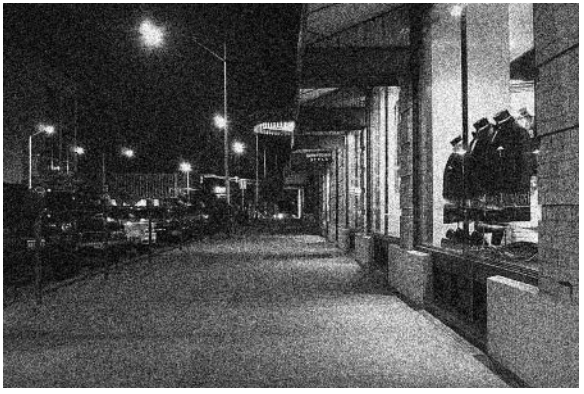
What are the tradeoffs of using a fast film or setting versus a slow film or setting? The tradeoffs include reduced sharpness and detail, less saturated color, and increased grain. Virtually all digicams have higher ISO settings too; some set it automatically while others require you to set it.

In the case of digital cameras, a high "ISO equivalent" setting provides greater sensitivity to light just as it does with film. At ISO 400 and higher settings,

image quality degrades especially by the increased signal noise, which appears in pictures as digital grain.

The vast majority of newer film cameras automatically read the ISO code from the film cartridge, so you don't have to set the film speed. On older cameras, the ISO is set by rotating a dial on the camera. This dial generally offers the full range of common ISO numbers from 25 to at least 1600.

On a digital camera, the ISO equivalent is usually set using one of the camera's electronic menus or submenus. Some models set the ISO automatically, selecting a higher ISO equivalent in low light for faster shutter speeds.



Pictures taken with a high ISO tend to exhibit noticeable grain, as shown here.

What is aperture?

a) The button you press to take the picture.
b) The size of the lens opening that determines the amount of light that strikes the film or image sensor.
c) A technical term that has always confused me even when it's been explained to me, so I just ignore it.

Correct answer: B. The lens aperture, or opening, determines the amount of light that strikes the film or digital image sensor to make the image. Either you or the camera's automatic system can control the size of the lens aperture by setting an f-stop. Changing the f-stop increases or decreases the size of the lens opening.

Aperture is shown as f-stop numbers, such as f/2.8, f/4, f/5.6, f/8, and so on. The smaller f-numbers, such as f/2.8, set the lens to a large opening that allows more light to enter the camera. A large opening is often referred to as "wide" aperture.

A small opening is referred to as a "narrow" or "small" aperture and is indicated with large f-numbers such as f/16. As you would expect, a small aperture allows less light to enter the camera. To get a good exposure with a small aperture, the amount of time the shutter stays open to let light into the camera must be increased. Most cameras automatically adjust the shutter speed when they are set in program or semi-automatic mode. If you're taking pictures in manual mode or with a manual camera, you set a longer shutter speed using a dial on the camera or an electronic menu.

Although taken with a narrow aperture (f/11), the telephoto lens (set to 200mm) reduced the depth of field in this picture.

Learning the jargon Switching to a wider aperture is also referred to as "opening up." Switching to a narrow aperture is referred to as "stopping down."

How to change the aperture On Single Lens Reflex (SLR) cameras, you can change the aperture using the aperture ring on the lens or a command dial on the camera body that allows you to select an f-stop. Some compact cameras have a control that allows you to select an f-stop using one of the camera's menus. In scene modes, such as portrait or landscape, the camera automatically selects an aperture based on the available light and the mode.

On cameras with interchangeable lenses, you set the f-stop using an aperture ring.

You can choose among a range of apertures. You first select an f-stop (aperture), and then you set the correct shutter speed to get a good exposure. The camera's light meter provides a signal in the viewfinder to indicate when you the correct shutter speed and aperture combination are selected.

In automatic modes—a shiftable program or aperture-priority semi-automatic mode—you select the f-stop (aperture) and the camera sets the shutter speed to get the correct exposure.

Which aperture, or f-stop, should you choose? Your choice depends on two factors. If you want to avoid blur from camera shake or subject motion, you need to choose a wide aperture (smaller f-stop numbers) so that you get the faster shutter speeds. Likewise, if you're using a telephoto (long) lens and hand-holding the camera, a wide aperture gives you a faster shutter speed that translates into sharper pictures.

The second consideration in choosing an aperture is to control the depth of field in your pictures. For more on that topic, go on to the next question.

Choosing a narrow aperture (in this case, f/10) and using a wide-angle lens (zoom lens set to 17mm on a digital camera), created sharpness throughout this image.

What is depth of field?

a) A term that indicates how much of a scene will be in reasonably sharp focus.
b) The size of the area is that's included within the scene.
c) The focal length of the lens that you're using.

Correct answer: A. Depth of field is the zone of acceptably sharp focus in front of and behind a subject. For example, a picture in which the background is a soft blur has shallow or little depth of field. In another picture, both foreground and background elements appear to be in focus has extensive depth of field. Aperture is the main factor that affects depth of field.

In some situations, you want extensive depth of field. For example, in a scenic picture, choose a narrow aperture; a large f-stop number such as f/16 or f/22 so that much of the foreground and background will seem sharp in the picture. For other situations, you'll want shallow depth of field. For example, in a portrait where you want the background to be blurred, choose a wider aperture, or a smaller f-stop number, such as f/2.8, f/4, or f/5.6. The subject will be in sharp focus, but the background will be soft, and less distracting.

Tip Remember that large numbers enlarge and small numbers shrink. In other words, large f-numbers, such as f/22, enlarge the range of acceptably sharp focus. Small f-numbers such as f/4 shrink the range of acceptably sharp focus and help to blur the foreground and background.

When you choose a small aperture such as f/16, a longer shutter speed is required to ensure that enough light reaches the film or sensor for a correct exposure. With slower shutter speeds, camera shake or subject motion can result in blurred pictures. If the shutter speed is slow, use a tripod, or switch to a faster film or ISO setting that allows for faster shutter speeds. If you want to freeze a moving subject, you'll need to use a high ISO film.

While aperture is the most important factor that affects the range of acceptably sharp focus in a picture, other factors also affect depth of field including:

- **Camera-to-subject distance** At any aperture (f-stop), the further you are from a subject, the greater the depth of field will be. If you take a scenic photo of a distant mountain, the foreground, midground, and background may all be in acceptably sharp focus. If you take a head-and-shoulders portrait, however, only your subject will be in very sharp focus.
- **Focal length of the lens** In simple terms, focal length determines how much of a scene the lens "sees." From the same position, a wide-angle lens sees more of the scene than a telephoto lens. In addition, a wide-angle lens produces an extensive depth of field provided you are not extremely close to the subject. In more technical terms, a wide-angle

lens or zoom setting has a 110-degree angle of view while a telephoto lens may have only a 23-, 12-, or even 4-degree (narrow) view of the scene. Because a long (or telephoto) lens or zoom setting (any lens or zoom setting over 50mm), magnifies the subject, the depth of field is shallow (depending on the camera-to-subject distance) so that often only the subject is in very sharp focus.

To blur the background in this picture, the aperture was opened up to f/2.8.

Telephoto lenses have a narrow range of view, and they compress perspective as shown in this photo.

What is shutter speed?

a) How fast a camera takes a picture.
b) How long the light is allowed to enter the camera.
c) How fast light travels from the lens to the shutter.

Correct answer: B. Shutter speed controls how long the curtain in the camera stays open to let light from the lens strike the film or the digital image sensor. The longer the shutter stays open, the more light reaches the film (at the aperture you set).

Shutter speeds are shown in fractions of a full second. Common shutter speeds (from slow to fast) are: Bulb (the shutter stays open until you close it by releasing the shutter release button), 1 second, 1/2, 1/4, 1/8, 1/15, 1/30, 1/60, 1/125, 1/500, 1/1000, and so on.

How to set the shutter speed On fully controllable and manual cameras, you can set the shutter speed using a dial on the camera, or by selecting it from a menu. With single-use and some compact cameras, the camera automatically selects the shutter speed based on the available light and the mode you've chosen. If your camera offers several program modes, for example a sports program mode, it will select the fastest shutter speed (based on the available light) to freeze subject motion.

On manual and some older cameras, the shutter speed is set using a dial, such as the one shown here.

When you increase or decrease the shutter speed by one full setting, it doubles or halves the exposure. For example, twice as much light reaches the film at 1/30 sec. as at 1/60 sec. To assure correct exposure, you need to change the aperture (f-stop) as you change to a longer or faster shutter speed. If you use program or automatic mode, the camera automatically adjusts the shutter speed.

Shutter speed affects your ability to get a sharp image in low light while hand-holding the camera, and to freeze motion or show motion as blurred in a picture.

To freeze motion, a faster shutter speed was used (in this case, 1/100 sec).

- **Hand-holding limits** As a guideline, never hand-hold a camera at a shutter speed slower than the inverse of the focal length of the lens. For example, if you're using a 125mm setting on a zoom lens, you want a shutter speed of 1/125 sec. or faster to ensure a sharp picture. Another helpful rule is to never hand-hold a camera at shutter speeds slower than 1/30th of a second.
- **Freezing or blurring subject motion** Shutter speed determines whether you can freeze a moving subject or allow it to be blurred in the picture. For example, you may want to freeze a basketball player in mid-air, but show the motion of water cascading over a waterfall. As a very general rule of thumb, to stop motion set the shutter speed to 1/125th of a second or faster. To show motion as a blur, try 1/30th of a second or slower and be sure to mount the camera on a tripod.

Equivalent exposures

Film or digital image sensors require a certain amount of light to make a good exposure. As we've seen, two factors determine the amount of light that makes the exposure: the size of the lens opening (aperture or f-stop) and the shutter speed. Set a wide aperture and you can use a fast shutter speed. Enough light will reach the film or image sensor to expose the image. But switch to a small aperture (f-stop), and you must use a slower shutter speed to get a good exposure.

Many combinations of aperture (f-stop) and shutter speed produce exactly the same exposure; in other words, the same amount of light will expose the image. For example, an exposure setting of f/22 at 1/4th second is equivalent to f/16 at 1/8th second, f/11 at 1/15, f/8 at 1/30th of a second, and so on. That's because you are decreasing the amount of exposure time as you change to a larger aperture.

Although this picture was taken at midday, the shaded area allowed the photographer to reduce the shutter speed enough to show the motion of the water as a blur.

If you use a fully manual camera or operating mode, you must change the shutter speed each time you change the aperture (f-stop). Or you must change the aperture each time you change the shutter speed.

The light meter indicator in the viewfinder will remind you to adjust the settings appropriately. In an Automatic mode, the camera will take care of that step for you.

All in-camera light meters read the amount of light reflected from the subject. They use this information to calculate the necessary exposure depending on the ISO, aperture size, and the shutter speed. If you change the aperture, the camera recalculates the amount of time needed for the exposure. Change the shutter speed, and the camera's meter determines what aperture (f-stop) is required for a correct exposure. In a manual operating mode you set both factors, using guidance from the light meter. You can try different apertures and shutter speed combinations to create different effects in your pictures.

Tip Many people prefer to use a semi-automatic mode such as aperture-priority mode. This mode gives them creative control over depth of field and eliminates the need to constantly make manual adjustments to the shutter speed. In this mode, you set the aperture (f-stop) for the depth of field that you want and the camera automatically sets the appropriate shutter speed. Note that in shutter-priority mode, you set the shutter speed and the camera automatically set the appropriate aperture (f-stop). In either mode, the exposure always remains the same of "equivalent."

These equivalent exposures give you control over the depth of field in your photo, and the ability to freeze or blur motion. For example, choose a wide aperture and a fast shutter speed combination, and the picture will have a shallow depth of field and motion will be frozen. This is often an ideal setting for sports pictures. With a small aperture and a slow shutter speed combination, depth of field is increased but any subject motion will be shown as blurred in the image. You can use this combination for creative effect or for pictures of

subjects that are not moving. For sharp pictures at long shutter speeds, mount the camera on a tripod. Depending on your camera, you can choose from among different exposure modes ranging from fully automatic to aperture and shutter speed priority modes.

In this picture, an f/5.6 aperture allowed the shutter speed to be set at 1/500 sec.

Putting it all together

When you combine film speed, aperture, shutter speed, and the amount of light in a scene, you have the essential elements of an exposure. On a bright, sunny day you can select from many different f-stops and still get fast shutter speeds to prevent image blur. There is little need to switch to a fast film for fast shutter speeds at small apertures. A high ISO film is necessary only if you're using a telephoto lens and need very fast shutter speeds.

Choose an aperture that helps convey the story you want to tell. In this case, the photographer didn't want the background to blur completely because it provided context for the photo.

As it begins to get dark, your choice of f-stop will be very limited with slow films or ISO settings such as ISO 100 or ISO 200. You'll need to use wide apertures (f-stops) such as f/4 to get a fast shutter speed. Otherwise, your images will show some blur from camera shake or subject movement. Switch to a fast ISO 800 film or setting, however, and your options increase. Now you can select smaller apertures (f-stops) such as f/8 or f/11 for greater depth of field. The fast film or ISO setting allows you to use fast shutter speeds and reduce the risk of blurred images.

While many people prefer to use a semi-automatic mode, you might also want to experiment with Manual mode for greater creative control. This picture was taken at 1/400 sec. at f/5.6 using a zoom lens set to 17mm on a Nikon D1X digital camera.

While the basic elements of exposure and using them together may seem like a lot to digest, you may find it easier to concentrate on one aspect at a time, for example, aperture, and experiment by changing the f-stop to achieve different effects. Your camera will tell you what shutter speed to set or it will set it for you. Keep a log or look at the information displayed with digital images to see how changing the aperture affects the final image. Then move on to experiment with different shutter speeds. If you have a digital camera, it's the greatest single tool you can have to learn photography quickly and inexpensively.

Regardless of what type camera you have, the more pictures you take, the more you learn; and the more you learn, the better your pictures will be.

Using a wide-angle lens helped increase depth of field in this photo.

What Makes a Photo Good?

A Short Checklist for Evaluating Photo Quality

What makes one or two pictures rise to the top in a stack of 20, 30, or even 100 photos? The answer, despite what beginning photographers may imagine, is not a secret known only to seasoned photographers and photo editors. Nor is there a single element that makes a photo "good." Rather there is a not-so-secret checklist of criteria commonly used to evaluate images.

Having said this, evaluation checklists vary by person, and, like other judging criteria, there are always exceptions to the rules. Furthermore, the lines separating the criteria very often blur. Photography is, after all, subjective.

Despite these disclaimers, knowing the commonly accepted evaluation criteria can give you a roadmap to getting better day-to-day photos, and a guide for evaluating the final images.

By having a clear center of interest along with subordinate elements that compliment the subject, the viewer knows immediately what the picture is about.

Is there a clear center of interest?

In a strong photo, the viewer can immediately identify the subject. While this sounds like a no-brainer, a surprisingly high number of pictures fail to clearly identify the main subject. Instead, a complex montage of elements competes for the viewer's attention.

In a strong picture, the subject should dominate the image and form the viewer's first impression. If the subject is strong, the viewer's eyes may move to explore other areas of the image, but the eyes are drawn inevitably back to the subject.

Great examples of this point are pictures of sunsets, an ageless and popular subject. While the colors and cloud formations of a sunset are dramatic, they are seldom enough to create a compelling image. Beyond a quick, though perhaps appreciative first glance, most sunset photos are quickly forgotten. And in large numbers, they quickly become "ho-hummers."

However, when the photographer adds an element that gives the sunset context and interest, you have a sunset photo with impact, and one that is far more likely to capture and retain the viewer's interest. The sunset photo here includes the activity of people enjoying the last moments of the day against the backdrop of the dramatic late-day color.

To evaluate your own photos for a strong center of interest, try asking yourself these questions. Or show the picture to a friend and ask your friend to honestly answer the questions.

- When you look at the picture, what is the first thing you see? If you're evaluating your own image, is what you see first the subject you had in mind for the photograph?
- What holds your eye the longest?
- Do other elements in the image compete with the subject for attention?
- Do technical aspects such as light and the direction of light, depth of field, focus, and so on add to or detract from the subject?

The activity of people on the piers adds interest beyond the colors of the sunset.

Is the image composed well?

In a strong photo, there should be a sense of overall organization. While entire books are written on composition, at the most basic level, composition is the process of establishing a sense of order for the elements within an image.

The lines in this image not only create organization, but also lead the eye through the image.

Note Composition rules or guidelines are a helpful starting point, but they are useful only as long as they enhance the overall image.

As a quick review, here are a few basic composition pointers.

- **Fill the frame** Filling the frame helps establish the center of interest, and, simultaneously, it helps exclude competing background details. You can fill the frame by moving closer to the subject or by using a longer focal length (or zooming in).

- **Organize elements** In composition, the rule of thirds is often used to organize elements in a composition. This rule is derived from the Golden Section or Golden Rectangle that divides a space, such as a photographic frame, into equal segments to create pleasing proportions. In simple terms, if you apply the rule of thirds in photography you simply imagine a tick-tac-toe pattern on the viewfinder. Then, when you place the subject of the photo at one of the intersection points, the result is a pleasing sense of order.
- **Control the background** A non-distracting background is a compositional tool to help bring attention to the subject of the photo. You can control the background by moving your position or moving the subject to avoid background distractions and by using a wider aperture (smaller f-stop) to blur the background. It's a good practice to review the entire scene and, when possible, eliminate or rearrange as many distracting background elements.
- **Keep it simple** The fewer the elements in a photo, the stronger the statement the image makes. Simplicity also helps prevent the viewer's eye from being distracted.

To evaluate the composition of your images, try asking these questions.

- Is there a sense of order and balance in the image that helps lead the eye through the composition?
- Are elements included that do not contribute to the subject of the image?
- Are elements excluded that, if included, would have enhanced the subject of the image?
- Do the depth of field, focal length (lens or zoom setting), lighting, angle, and perspective enhance the composition?
- Does the crop enhance the composition?

Is the focus crisp and is the exposure appropriate?

With the exception of photos that either intentionally show motion or are taken as soft-focus images (such as a portrait), sharp focus is one of the first things that everyone notices about an image. Going a step further, the center of focus should be on the center of interest of the subject. In other words, if the picture is of a person, the focus should be on the person's eyes. The sharpest point of the picture should pinpoint what the photographer sees as the most important aspect of the image.

The exposure (the combination of focal length [lens or zoom setting], aperture, shutter speed, and ISO) should also enhance the intent of the photo. For example, in a scene of an old building, did the photographer use exposure controls to emphasize the age of the structure and perhaps the starkness of the

surroundings? To create this sense, a photographer can choose a moderately wide-angle lens or zoom setting, use black-and-white mode (or film), choose a higher ISO (or use a high-ISO black-and-white film) set a narrow aperture (larger f-stop number), and choose a fast shutter speed (depending, of course, on the light). This combination would produce sharp detail, visible grain or digital noise to enhance the sense of antiquity, and increased depth of field to emphasize the sense of loneliness.

On the other hand, if the image is a portrait of a person, you might want to look for very different exposure settings, for example, a low ISO, a wide aperture (small f-stop number), and, depending on the light, a slower shutter speed. In this case, the portrait would be little or no grain or digital noise and the narrow depth of field would blur the background to emphasize the subject. (Of course, a photographer might choose the opposite setting to achieve an entirely different look.) The question is whether the exposure settings were planned to enhance the image "design."

Questions that can help you evaluate whether focus and exposure settings are appropriate for an image include:

- Is the sharpest point in the image on the subject of the photo?
- Does the depth of field enhance the subject, mood, or look of the image?
- Does the focal length or zoom setting enhance the subject and message?
- Does the image have good overall contrast for the type image the photographer intended?
- Does the color appear natural or does it help set the mood of the image?
- If the image is in color, would it be stronger in black and white?

The sharpest focus should be on the most important aspect of the subject. For pictures of people, the sharpest focus point should be on the subject's eyes.

Does the photo tell a story?

Most often, the difference between a picture you remember and one that you quickly forget depends on whether the photo tells a story. As a viewer, you want to see the story, and this is one of the most important evaluation points to look for in a photo.

In strong photos, the story is revealed at first glance, and it is self-contained. In the best images, the story evokes an emotional response from the viewer. It's that emotional response that ultimately makes the image memorable.

Try asking these questions as you evaluate images to decide if the image tells a story.

- At a minimum, does the photo make a statement that you can articulate?
- Does the photo elicit an emotion? In other words, can you relate to the subject or the situation?
- What could be changed in the image to give it a stronger story or message?

Photos that tell a story are always strongest, even if they fail to meet some of the other criteria.

Does the lighting enhance the subject and message?

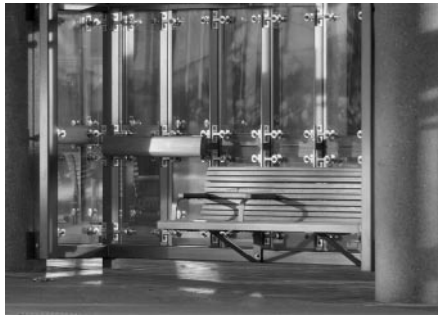
Like the composition, lighting is a subject that is worthy of book-length discussions. Light should be used to its maximum potential to reveal what's important in the image and to set the overall tone of the photo.

In masterful hands, lighting is used selectively to focus attention on specific areas of the subject while simultaneously de-emphasizing less important areas, to guide leading the eye through the composition, and to establish the overall mood and tone of the image by taking advantage of the different temperatures (colors) of light.

Light is another "design tool" that can be used to enhance the overall mood and intent of the image and subject. For example, when taking a portrait of a man, a strong, unfiltered white side light may be appropriate because it emphasizes the man's rugged and angular features. On the other hand, a soft, warm-color diffused light is more appropriate for a portrait of a woman because it enhances her delicate features. And, of course, there are few photographers who fail to take advantage of the superb colors of light during sunrises and sunsets.

When evaluating the lighting merits of a photo, ask:

- Is the intensity and color of light appropriate for the subject?
- Is the light too harsh, does it create too much contrast, or is it too soft or too flat?
- Are all important aspects of the subject well lit, or could the lighting be improved by using a flash, fill flash, reflector, or auxiliary light?
- Does the light help convey the overall message of the photo?
- In a color photo, is the color balanced or corrected for the light temperature (in other words, the overall color should be natural-looking). And if it isn't, does the color cast contribute to the photo?



The correct angle and quality of light can transform everyday scenes and objects into photo opportunities.

Is the approach creative?

In broad terms, you can define "creative" as an image that goes beyond predictable techniques and treatments. In more specific terms, the best creative images show subjects through the photographers' eyes and perspective. In other words, the photographer reveals the subject in extraordinary ways: ways that the viewer otherwise would not have seen.

Creative techniques and subjects can range from bringing abstract ideas into a visual form, taking a concrete idea and making it abstract, relating or associating unrelated concepts into a visual space, or, in short, taking a fresh look at and lending the photographer's unique thinking and vision any subject.

When evaluating the creativity of a photo, ask yourself:

- Does the photo disclose more about the subject, or show it in unexpected ways?
- Does the photo relate visual elements in unusual and intriguing ways?
- Is the photo interesting and fresh?

A creative approach reveals the subject in uncommon ways.

You now have some basic criteria for evaluating your work. If an image is your best so far, enjoy the image and your achievement. Then go back in a month or two and evaluate the image against the six basic criteria again. If it still passes the test, frame it and hang it on the wall, and then go out and take a better picture.

Photo opportunities can pop up anytime and anywhere. If you have your camera with you, you can take advantage of scenes such as this.

Photo Challenge: Tell a Story

Take a picture that's worth a thousand words

The toughest challenge in photography is to tell a story in a single image.

Professional photographer Paul Liebhardt describes what makes pictures truly great. According to Liebhardt, if a picture doesn't have meaning—if it doesn't tell a story—the image is just another pretty picture. And to tell a story, you must know the subject well. For Liebhardt, this means spending time with the people and places he photographs. "You have to give the viewer something that he sees that makes him understand it all," he explains. Even little things, no matter where they are, can set the picture off, Liebhardt says.

Photographs are a powerful way to tell a story. Leslie Fratkin, a professional photographer based in New York City, echoes Liebhardt's sentiments. For Fratkin, telling the story has meant helping those who know the subject best tell their story.

This picture is symbolic of the Seattle earthquake aftermath.

Fratkin felt so strongly about the stories told in the images taken by Sarajevo photographers during the Bosnian war that she committed five years to getting their stories told—in images. She created a book and exhibition in which the images taken by nine Sarajevo photographers tell the story of war from their intensely personal perspective.

The hardest part

This challenge—telling the story in a single picture—isn't easy. By comparison, it makes perfecting the technical aspects of an image look like child's play.

This photo challenge has the potential for changing the way you see every image, whether it's pictures of your children, of your family, of nature, or of still-life scenes. Remember that the key is to convey the meaning to viewers, to help them understand what you understand about the subject.

Lessons along the way

Here are some of the things to consider about using a camera to tell a story:

1. Most often, what you see in front of you is a pretty picture, but it isn't the story.
2. To understand the story, whether it's small, large, humorous, or profound, you have to contemplate, research, watch, and talk—but mostly listen.

Children often present the best opportunities to tell visual stories.

3. Every so often, if you're persistent enough, fate presents you with effortless story pictures. To take advantage these opportunities, you have to have a camera in your hands and you have to react quickly. It is entirely possible to miss the picture if you're fumbling around.
4. Unlike pretty pictures, images that capture the essence of a subject can have technical flaws and still be keepers. Though you might wish you had every technical detail correct, it's okay if the image is less than perfect because it has the strength to stand on its own merit. In other words, being off by an f-stop doesn't diminish the story.
5. Make some rules for photographing stories. For example, many photographers consider it cheating to set up pictures by using unnatural props. In other words, if adding an object to a scene helps tell the story, the object is only okay if it is part of the subject's natural context. But it might not be okay to add props, such as stuffed animals, to a scene.
6. Instead of taking pictures right away, look around, get to know the place, understand what's happening, and look more closely at what you're seeing.

Waiting to find the story—to understand the story—is certain to frustrate anyone who is inherently impatient or anxious to get images in the canister or on the memory card quickly.

Your turn

If you have trouble getting started, start with your own story. Take pictures that reflect you—what you do, what matters to you, or what you want to be or do.

Weekend Photo Ideas

What else is there to photograph?

Having trouble finding photo subjects? Try borrowing flower arrangements from a friend, or try some of the ideas in this article.

When it comes to photos, there's a pecking order in our group at the office. Those with children, especially young children, are at the top of the photo pecking order. Why, you might ask? The answer is that this group has live-in photography subjects.

Next in the hierarchy are people with pets, preferably docile pets, trained or caged pets, or pets with interesting personalities or habits—in other words, pets that give you half a chance to get a few good pictures.

On the third rung in the hierarchy are people involved in interesting sports. With some sports—volleyball and baseball, for instance—it's hard to participate and take pictures simultaneously, but the result can be exciting images. The downside, especially with slower-paced sports such as golf, is that pictures can be dull and predictably repetitive.

The rest of us in the group sink ignominiously to the bottom of the heap. We're the ones who often drift aimlessly through the hallways in search of something interesting to photograph.

Give yourself an assignment

One of the best ways to solve the dilemma of what to photograph is to give yourself an assignment. For example, photograph everyday objects and people from the perspective of a child. Do some research for the assignment and find out how tall a three-year-old child is, and then take pictures from that height and that mental and emotional viewpoint. With every assignment, work on techniques such as perspective, depth of field, and macro photography. Experiment with different shutter speeds and focal lengths.

Here are some more ideas for finding interesting and inspiring photography subjects.

People and things Public parks are ideal for photographing people and their playthings. For example, parks are a great place to get pictures of details on a bicycle, sports equipment in a heap on the basketball court sidelines, the silhouette of a child playing on the slide, or a boat floating lazily on the lake. In the park and in public, always ask permission before you photograph people and children—even pets.

The park is a great place to find photo subjects.

Use your time in the park to work on techniques, such as low-light images, panning, images that show action, and cutaway images. This is also a good place to use a long lens, or to switch to telephoto mode, so that you can remain unobtrusive to the activity going on in the park.

Still life Virtually anything you have around the house is fair game for a great still-life photograph, from cut crystal to old brooms to nuts and bolts. Try photographing a wine glass, a sandwich, fruits and vegetables, a piano keyboard, musical instruments, game tables, or a meal on a platter. Portray life on a miniature scale by photographing old dolls and toys. Arrange the subjects as an artistic composition, and then experiment with using window light, a flash, a flashlight, or household lamps. You'll find that every subject presents different challenges such as lighting, composition, and texture.

Real life Tell a story. There is no more powerful use for a camera than for telling a story. Photojournalists travel thousands of miles to tell stories of international import. But you don't have to go that far to tell the story of your life, or the life of someone close to you. For example, one reader recently had a photo epiphany—she decided to use her camera to tell the story of her aging mother. Stories of life are close by, and they are powerful, compelling subjects for photographers of all skill levels.

Controlling depth of field and using selective focus can produce interesting images that convey information about the subject, such as the remoteness of this cabin in the woods.

Childhood memories Recall the activities and symbols that were special to you during childhood, and try re-creating those memories photographically. For example, if you had a tree swing, find a local tree swing, and then photograph it in a way that evokes the emotions you recall feeling when you were a child. Or, go back to a familiar place from childhood, and photograph it from your childhood perspective. The hardest thing about making these images is infusing them with the emotion and meaning you want to express.

Choose a single subject and photograph it repeatedly to help develop your technique and personal style.

A word Pick a word and photograph it. For example, what does "lonely" look like photographically? How would you photograph happiness, sadness, beauty, energy, imagination, creativity, hope, or productivity? Use the palette of light to help express the word—the golden quality of sunset, the rich pastels of sunrise, and the harsh flat light of mid-day can all help characterize the word you're illustrating.

One just like that Find a picture from a book, magazine, or Web site that you wish you'd taken, and then try to re-create the image. This is another good way to learn about technique. Try to duplicate the light, the tone, or the perspective—whatever it is that makes the image appealing. Then branch out and create a similar composition of your own.

Whether you're photographing mushrooms from the grocery store, or a slice-of-life story, simply taking pictures continually and consistently pays huge dividends—not the least of which is to help you define your style and voice as a photographer.

Six Easy Ways to Improve Your Photography

Fixing what new gear can't

Spending time figuring out what it takes to get better pictures can make a noticeable difference in the quality of your photography.

In photography, there are two basic kinds of "stuff": *thinking* stuff—the way you take your photographs (planning, composing, and photographing)—and *gear* stuff (cameras and accessories). While either kind of stuff can improve your photography, most people like to think that new gear will be the magic bullet that turns ho-hum pictures into blue-ribbon winners. You know the kind of rationale I'm talking about: "Get the latest and highest-megapixel camera, and you'll get better pictures." That reasoning may work for truly antiquated equipment, but new gear won't fix how you take photographs.

Many photographers find that buying new gear makes the image quality—specifically, the resolution—jump to astounding heights. The kinds of images don't necessarily change, though. Despite spending a lot of money, to get better pictures, the pictures only improve if you get better at using your camera. It sounds simplistic, but in the rush for new and better technology, it's a point easily overlooked.

So how can you improve? Try this list of personal improvement techniques. There's sure to be a few items on this list that will help you.

You might strive to take better pictures at slower shutter speeds by holding your camera more effectively.

1. Stop making the same stupid mistakes

Identify the problem For example, some photographers fall into the trap of consistently taking "snapshots": taking the obvious picture without exploring alternatives that could give the image more impact and interest. Other patterns you might notice in your own picture collection:

- Badly exposed scenes caused by mixed-lighting that combine extreme lighting (very dark and very light areas in the scene).
- Pushing the limit on hand-holding the camera at slower shutter speeds, and, or trying to rescue marginally sharp images on the computer. If you have a tripod, use it!
- Accidentally focusing to one side or the other of where the focus should have been.
- Forgetting to take the camera out of "macro" mode, so your pictures are routinely out of focus.

Solve the problem Do some research on how to solve problems such as mixed lighting and extreme lighting differences. You might want to make a list of your problem patterns on an index card, and put the index card on top of your camera in your camera bag.

2. Compare your pictures to those you wish you'd taken

Compare work with other photos Here's something to try: Go through a stack of magazines, books, or brochures and find pictures that look like the sort of pictures you like to take yourself. Then compare them side by side.

Try new approaches The goal of this exercise is to determine ways to improve your approach to specific types of photographs. Study the differences between your pictures and the professional photos, looking for variations that might give you a more creative punch without copying someone else's methods.

3. Wait a long time before you start taking pictures

Understand why it's good to wait Taking a while to get to know your subject, whether it is a location or a person, almost always produces better photos than pointing and snapping a picture of the first subject that crosses the viewfinder.

Be patient When you go somewhere with the intent to take some pictures, try walking around and watching the activity. After a while, you'll get a sense of the place and understand its story—which should lead to better pictures.

With patience and a willingness to chat, you might meet people who will allow you to access vantage points that you wouldn't have seen otherwise.

Instead of randomly taking pictures as you learn the scene or subject, waiting can give you a clear sense of where and what the best pictures are. You might find that this technique allows you to concentrate on fewer locations and got better results in the process.

4. Take pictures instinctively and quickly

Training yourself to photograph quickly can help you get pictures like this one.

Point and click now Although this seems to contradict the previous guideline, think of it as the complementary flip side of waiting to take pictures. In any scene, there are images that demand no hesitation.

Take pictures quickly Quick, instinctive pictures are the best images for news and sports photographers, but instinctive photography doesn't always come naturally. To capture the spontaneous moments, practice rapidly framing your picture and pressing the shutter release so you don't miss the picture. To get really good quick images, you will have to know the camera controls inside and out, backward and forward.

A third trip to the same location was the charm: The interesting lighting was the element that had been missing in earlier pictures.

5. Take pictures again

Be your own critic When you review your pictures, look for ways to capture the image differently if you could do it over again. If you have the chance, go back to the same location and take the pictures again with different lighting or from a different vantage point or perspective.

Keep going back If the subject was worth photographing the first time, chances are good that it's worth photographing again. More importantly, the more often you photograph the subject, the more familiar you become with it and the better your images become.

6. Get a second opinion

Get input Ask friends, family, and co-workers to review your pictures. If you're lucky enough to know some other photographers, discuss your images and different ways an image might be cropped for more impact or how a different aperture would better convey the message.

Quick, instinctive pictures can be powerful in their own way.

Decide whom to ask If you have friends who enjoy photography, arrange a time when you can go through a stack of each other's photos and give honest feedback and ideas. Or just ask around: anyone with an eye for design, composition, and style can give you valuable feedback. Even untrained friends and family will see elements in your photos that you might not have noticed. Almost all feedback provides valuable insight and ideas.

Six Digital Photo Problems

And how to avoid them

Learning the peculiarities of a digital camera, such as setting the white balance correctly, can save lots of computer time when you try to correct an image later.

You finally got a digital camera. You know that photographic nirvana is now within your grasp. Now you have the power. You can see and correct lousy pictures on the spot. You can correct the flaws in your digital darkroom. You smirk, thinking that you'll never again pay for 36 weirdly tinted glossy prints from the local photo lab. Never again will you slink out the door convinced that you are the world's only perpetual walking photographic failure.

But as images begin rolling off the digital camera and onto your computer's hard disk, the reality fairy appears, and nirvana's glow begins to fade. Regardless of how you take pictures, some images have stark-white highlight areas. On other images, the focus lists somewhere to the right of crisp. And on others it's clear that you have single-handedly invented previously unknown categories of bizarre color tints. You become deeply depressed.

Okay, maybe not deeply depressed, but at least very frustrated. You must get a grip. The message the reality fairy is trying to get across is that digital cameras, like their film counterparts, present a unique a set of challenges and nirvana is, after all, elusive.

The truth is that, with a digital camera, you do have more power over your images both when you take them and when you correct them. But unless you want to spend long hours at the computer correcting problems, it's prudent to modify some of your photography techniques for digital images.

Here are a few of the characteristic problems associated with digital cameras, and tips on how to avoid them.

Getting to know the peculiarities of your digital camera is the key to getting the best digital images.

1. Bizarre colors happen

Too green, too yellow, or too blue images most often mean that you didn't set the white balance before you took the picture. What, you may still be asking, is a "white balance setting"? The white balance setting tells the camera the type (specifically, the color temperature) of the light you're in. In turn, the camera looks at the setting you chose, and adjusts colors so that white objects appear white in the final image. White balance settings are the digital equivalent of choosing daylight versus tungsten film, or using color-compensation filters.

For example, if you take a picture under fluorescent lights, and you neglect to set the white balance to fluorescent, the picture will have an unattractive green cast. If you take a picture under common household (tungsten or other incandescent) light, the picture will have an equally unattractive yellow cast.

Indoor lighting isn't the only problem. For example, the picture on the left at the beginning of this article is an original picture with the white balance incorrectly set to shade when, in fact, the picture was taken in bright sunlight. Next is the same image with the best color correction that could be achieved on the

computer. While the second image is better, it is still not a keeper. The moral to this story is that if you don't set the white balance correctly, it can be difficult to correct the color in the best of image-editing programs.

How to avoid it Many cameras have white balance settings that cover the spectrum of different color temperatures. If you don't already know, learn how to set the white balance on your camera. Usually the white balance setting is displayed on the LCD as part of the current exposure information. You can change it using the camera menus (for example, under the recording menu) or camera settings. Once you know how to set the white balance, the trick is to remember to set it to match the light before you take a picture.

Alternatively, you can set the white balance to automatic, and let the camera calculate the temperature for you. Set to automatic, the camera will get it right more often than not.

Some cameras also offer manual white balance settings. To manually set the white balance, you point the camera at a white object that fills the entire frame, and then take the picture. The camera adjusts the color balance for the specific scene. This is the most accurate method, and the one to use when you need the assurance that colors will be accurately reproduced in the final image.

Note If you take pictures in RAW mode, white balance settings can be set or adjusted after the fact using the manufacturer's RAW processing program.

2. Focus is fuzzy

Digital cameras, perhaps even more than conventional cameras, can produce images with less-than-tack-sharp focus. Because many digital cameras are very lightweight, holding them steady can be tricky.

In addition, some digital cameras still have the bothersome problem of shutter lag, the interval between the time you focus and press the shutter release button, and the time the exposure is complete. In that interval, the subject can move, or you can inadvertently move the camera, thinking the exposure is complete, either of which results in fuzzy, out-of-focus images.

In some otherwise hopeless images, you can, of course, claim the result was intentional, along the lines of flexing of your creative muscles.

How to avoid it Some newer digital cameras have image stabilization features to help overcome this problem. If your camera has this feature, be sure to use it.

If your camera doesn't have image stabilization features, look for ways to steady the camera. For example, take pictures using the viewfinder instead of the LCD. Placing the camera up to your eye and having your arms close to your body helps stabilize the camera. You can also use a lightweight monopod or tripod, or you can sit the camera on a solid surface to take pictures.

Remember that what looks sharp in the LCD may not be sharp when you see it at full size on the computer screen. Many cameras allow you to zoom the image in the LCD. Get in the habit of using the LCD zoom to confirm whether the focus is sharp.

Taking the time to zoom in the LCD image is impractical while you're taking a rapid sequence of pictures, for example, a child blowing out candles on a birthday cake. For a quick sequence of pictures, try using the burst or "best of the series" option, if your camera offers it.

In addition, keep in mind that virtually all autofocus systems have difficulty focusing on certain subjects. These include smooth and continuous tone subjects, finely patterned objects, subjects with objects in front of them (such as animals in a cage), and subjects that have little contrast with the background.

3. Don't blow the details

White areas in the image that have no detail are called blown highlights. While this problem isn't confined to the digital camera arena, it is more prevalent with digital images than with film. Blown-out highlights are most common in flash pictures where the photographer was too close to the subject. But highlight blowout can happen with almost any well-lit subject.

And just as with film images, if the camera does not record detail in an area, highlight or shadow, no amount of image-editing (in this case, burning in) can put in detail that was never recorded.

Highlight blowout is evident on the upper area of the train in this picture.

How to avoid it Some cameras offer a playback mode that highlights blown-out areas as flashing areas. If your camera has this feature, use it. If you see that the image has blown-out highlights, retake it, metering on the lightest area in the scene.

If your camera doesn't have this functionality, make it a habit to meter on the lightest area of your primary subject, for example, a place where the light is striking a surface directly. Then take the picture at the meter reading you get for that area. Then take at least two more pictures, decreasing the exposure in each one. You can also combine multiple exposures on the computer to get a perfect exposure.

There will always be scenes in which the lighting differences are too great for both the light and dark areas of the image to be accurately exposed. In those types of scenes, try to change your position to lessen or eliminate the amount of very light area or very dark area included in the frame.

For example, if you're photographing a landscape scene that has a bright sky and a darker foreground, tilt the camera up to have more sky in the frame, or down to include more foreground (depending on which area is your primary subject). Then meter for the area that is your primary subject.

4. Size does matter

If you have a limited supply of memory cards (and who doesn't?), you might choose to take pictures at the medium- or low-resolution setting on the camera and use high compression. This tactic certainly allows you to store more pictures on a memory card, but it doesn't guarantee that you'll be able to get the quality enlargements you might want from the images.

Although this picture was taken on a sunny day, the photographer avoided blowing out the highlights by metering for the lightest areas.

How to avoid it You might want to set your camera on the highest resolution and to review pictures frequently as you work, deleting pictures that you're absolutely certain you don't want. Also, since the price for memory storage media is declining, it makes sense to pick up an extra storage card as your budget allows.

Besides obliterating details you might like to maintain in the picture, built-in flash units also cause hot spots, as shown in the area in front of the puppy, that are time-consuming and frustrating to fix.

5. Flash causes hot spots

The flash, onboard or external, can be either your best friend or your worst enemy. The latter is most often the case. But because a digital camera offers you unlimited free testing, there is no longer any reason to worry about this problem.

How to avoid it First, find the manual that came with the camera, and look up the flash range the manufacturer recommends. Then test the flash range to get a personal feel for the recommended distances. Instead of subjecting your child or pet to the flash tests, sit a household object like a pillow or a basket on a chair, turn on the flash, and then take test pictures standing at different distances from the subject.

If images are too light, note how close you were to the subject and step back. If the images have dark outer edges, or "flash fall-off," step in closer to the subject. Also look for obvious hot spots, and determine whether you need to dial down the flash unit's power (if your camera offers this option) or use a diffuser (either homemade or commercial) on the flash unit.

6. Eerie patterns emerge

Moire, (pronounced *mwah-RAY*), is a pattern of wavy or rippled lines created when repetitive elements intersect. You can see this effect by looking through two wire screens, and then rotating one slightly. You also can sometimes see a moire in newspaper photographs when the printer's halftone screen intersects at an angle that creates an eerie pattern.

The image sensors in most digital cameras are composed of a grid of light-sensitive cells. When you photograph repetitive patterns (bars, stripes, plaids, and so on), an interference pattern, or moire, can result. In addition, most autofocus systems do not perform well with repetitive subjects.

What to do The most important step is to be aware that this can happen when you take pictures of subjects that include repetitive patterns. You can vary the focal length (zoom in and out), and vary your angle. If you still get moire in the image, try using the blur tool in your image-editing program to lessen the moire. Or try a descreening filter, if your image-editing program has one.

While these tips might not instantly transport you to digital photography nirvana, chances are good that you'll be closer than you were before.

Winter Camera Care Tips

For anyone who braves the frigid temperatures of winter to photograph some of Nature's spectacular winter scenes, it pays to ensure that you have adequate protection for both you and your camera.

Here are a few tips to help you prepare for a winter photo session.

- **The care and feeding of batteries** Cold weather can shorten the life of batteries anywhere from a barely noticeable reduction in power to a sharply shorter life. Lithium batteries and the rechargeable Ni-MH cells last longest in cold temperatures. Be sure to carry spare batteries and keep them warm by stowing them in an inside coat pocket. If you opt to carry a chemical warmer, be aware that the warmers can reach temperatures as high as 150-degrees Fahrenheit—far too high a temperature for virtually all film and camera gear.
- **Dress in layers** Wear a roomy, warm, weather-proof coat as the outer layer. A roomy coat is a bonus because it allows you to tuck the camera inside your coat as you move from one location to another.
- **Wear gloves** Besides keeping your fingers warm, gloves will prevent your fingers from sticking to the camera lens or tripod legs in very cold temperatures. You can layer a thin glove or glove liner under heavy mitts. You might try wearing fingerless leather workout gloves as an inner glove in moderately cold conditions. Also, consider checking sporting goods stores for gloves that feature fold-back fingertips.
- **Buy or make a weatherproof cover for your camera** Winter weather conditions can range from fog, rain, and sleet, to blowing snow. Various companies, including Domke, make weatherproof covers for cameras. They are large enough to accommodate the large SLRs and lenses, and they have an opening for the lens with a pull tie to secure the cover. If you don't want to invest in a ready-made cover, you can fashion one from a heavy-gauge plastic freezer bag. To secure the bag around the camera and lens, you can use Velcro straps or rubber bands. Between photography sessions, protect and warm your camera by putting it inside your coat or gear bag. If you have a lens hood, use it in blowing sleet or snow to help protect the lens.
- **Protecting film** In low-humidity conditions (around 45 percent relative humidity), static electricity can build up on the camera's pressure plate and discharge when you advance the film. Film can be streaked or fogged in these cases. To avoid static electricity, be sure to use single-frame mode. If your camera offers the option of switching from automatic to manual film advance, switch to manual mode, and then advance the film slowly.

- **Rely on a zoom lens** In cold conditions, you want to avoid handling icy cold lenses. In extremely cold weather, a metal lens case can stick to your fingers, and a plastic lens case could potentially break. Instead, mount a zoom lens with the most versatile range to avoid changing lenses.
- **Transition the camera between temperature changes** As Peter Burian recommends in *The Joy of Winter Photography*, when you first go outdoors, allow your gear to cool down. Once you're in the field, Burian cautions against taking cold photo equipment into a warm or humid vehicle or building for short periods. "If you do so, condensation will form on the exterior of the camera and this moisture will freeze when you return outdoors," he says. "When you must take cold photo equipment indoors, keep it inside a camera bag with the zippers closed tight," he adds.

In addition to these tips, be sure to follow general safety precautions and that includes having the following.

- Fully charged cell phone, spare battery, and car charger cord
- Compass
- Flashlight
- Bottled water
- Map
- Notepad and pens
- Blankets in the car
- Small tool set
- Nonperishable snacks
- Masking tape or duct tape
- Identification, passport, driver's license (as appropriate)
- Watch

Winter offers some spectacular opportunities for photography that you can enjoy even more when you are prepared for the weather.

Tips for Online Auction Photos

Photos for online auctions might not win photo contests, but they should be winners in the eyes of potential buyers. By following a few simple tips, you can make your photos stand out on cyberspace auction sites.

There is a hard-to-resist primal appeal to the idea of having a stranger pay real money for stuff that is stacked to the rafters in guest room closets, attics, or garages. This appeal alone might explain the phenomenal growth of online auction sites in the past few years. After all, who hasn't whiled away a few hours browsing through other people's stuff at the cyberspace equivalent of the world's largest garage sale?

Whether you're buying or selling, you know that pictures of the items will maximize their appeal. Since potential buyers can't examine items, providing a descriptive photo can make or break the sale. Another reason to include photos is that many auction sites will allow you to advertise your item on additional areas of the auction site, such as in the photo gallery.

You don't have to be a pro to take pictures of the items you want to sell. In fact, you don't even have to have a digital camera. Just take pictures with your film camera and have the film scanned at a photo lab or scan them yourself. With some smaller items, you can place the items on a flatbed scanner to create the image.

While you don't have to be a pro to take the pictures, it is a good idea to keep the following basic tips in mind as you take the pictures.

Basic tips for taking pictures that sell

Auction photos do not have to be works of art. But they do need to answer questions that a potential buyer might have. Photos should show what the item looks like in accurate detail, reflect the color and condition of the item, and show the fine points, such as handcrafted details or the interior of the item. Sounds relatively easy, right? It *can* be easy with a little preparation and a few tips.

Here are four basic guidelines to follow.

Use simple, uncluttered backgrounds To show off the item you're selling, create a makeshift studio next to a window or outdoors on a table, stand, or chair. The area you choose should provide enough room for you to work comfortably. Clear any items from the area that will not be included in the photo.

Then use a cloth, a roll of inexpensive craft paper, or poster board for the base and backdrop. If you photograph items outdoors, try to set up the table and backgrounds in an area where there is little or no wind. Then tape the paper to the edge of the table to avoid having gusts of wind turn over small items you're photographing.

A clean, uncluttered background is easy to set up in a makeshift studio.

When you create the background, choose colors that will show off the items you're photographing. For example, if you're photographing a crystal wine glass, choose a background other than white.

Use even, diffuse lighting The goal of lighting in this case is to provide soft, even light on the subject. Consider setting up your photography area next to a window (for small items) or outside on an overcast day or in the shade. If the area you're working in has natural light coming from one direction, the oppo-

site side of the item may be dark and lack detail. You can bring a small lamp in to fill in the darker area.

An on-camera flash can overexpose the subject, obliterating details that a potential buyer would want to see.

You might be wondering about the on-camera flash. In most cases, an on-camera flash creates harsh shadows around the subject, overexposes the details you want to show, and creates distracting reflections as the light from the flash bounces back to the lens. If possible, use natural or household lights to light the object.

Ensure tack-sharp focus The advantages of sharp focus are obvious, yet many auction photos are blurry enough that it's hard to tell what the item really looks like. To get tack-sharp photos, the most important thing to know is the focusing range of your camera. Be sure to read your camera's manual to learn the focusing range, and then stay within that range when you take photos. If the range doesn't allow you to get close enough, switch to the close-up mode on the camera and then move in as close as the focusing range allows.

To ensure crisp focus, stay within the focusing range of your camera.

Note Many companies offer accessory lenses for digital cameras. If you often sell items—especially small items such as stamps or coins—you might want to invest in a close-up accessory lens. These lenses typically require an inexpensive adapter ring that fits onto the camera's built-in lens.

The most important point in getting crisp focus is to check the camera's in-focus indicator. Just because you pressed the shutter release half-way down doesn't mean the picture is in focus. Look for the in-focus indication in the viewfinder before taking a picture.

Show color accurately If you're selling bone china, you don't want a strange green or blue color tint in the photo. To avoid unwanted color tints, be sure you set the white balance on a digital camera to match the type of light. If you're using film, buy film that is balanced for the light you're in or use the appropriate color-correction filter. While you can make color corrections on the computer later, it saves editing time if you use the correct camera settings, film, and filter.

Additional tips Here are a few other tips you might find helpful:

- If you are using a digital camera, check your pictures on the computer *before* you dismantle your studio. This saves time if any photo needs to be retaken.
- If you're using a digital camera, always meter for the lightest (highlight) area in the scene. This means you should point the camera to the lightest area, press the shutter release button halfway down, and then note the exposure settings (the f/stop and shutter speed). Then use that exposure setting to take the final picture. Except in instances when you use a flash, this technique helps avoid highlight areas that appear white with no visible detail in the final picture.
- To record small, fine details, mount the camera on a copy stand (sold at photo stores) or on a tripod and be sure to switch to macro mode.

If you don't set the white balance appropriately on a digital camera or use film or a filter appropriate for the light, the image might have an unnatural color tint. This photo was taken under household light with the white balanc set to "shade."

Image editing

To edit the images in an image-editing program, begin by adjusting the overall tone and contrast. If the image has an unwanted color tint, you can correct it in any of several ways. If you used a white backdrop, setting the white point on the lightest area of the white background can sometimes correct the color instantly. For example, in Digital Image, choose **Adjust Tint** from the **Touchup** menu. Click an area in the picture that should be white, and then click the lightest or brightest white area in the image. Then click **Done**.

Or you can use the **Tint Auto Fix** option in Digital Image. If you're using another image-editing program, try the Auto Color option. From there, you can make manual adjustments until the color is accurate.

In this photo, the white balance was set to incandescent to match the light. Minor color adjustments were made in Digital Image.

If your image-editing program offers Level or Curves adjustment tools and a brightness and contrast tool, use the automatic or manual adjustments to adjust the brightness and contrast of the image.

Then use the cloning tool to delete small imperfections, such as dust, or use the cloning tool to eliminate unwanted or distracting objects from the image. If you clone large sections, be sure to resample or set a new starting position frequently as you work. Frequent resampling gives the cloned area a more realistic look.

Next, use the crop tool in your image-editing program to crop the image. You can crop to eliminate empty space or distracting objects in the image. You may want to leave a little space around the object as a visual frame.

Before you begin the final step in the process, be sure you check the guidelines of the auction site. Many auction sites set a 50 KB file size limit to ensure quick page viewing for visitors. Depending on the image-editing program you're using, you can resize the image so the image file meets the file size requirements of the auction site, or you can use the option to save the image for the Web. The latter option takes the guesswork out of the sizing process because it shows you, as you work, what the final file size will be for each of the size options.

If you're using Microsoft Digital Image, just choose **Save Special** from the **File** menu, then choose **Save as a Web-ready Picture**. Under **Click a picture size**, choose an option that results in a file size that falls within the auction site's guidelines. If you are not using Digital Image, look for the Image/Size or Resize command.

Storing auction photos

A picture, especially one for an online auction, is certainly worth a thousand words. If you're selling a closet full of items online, you might quickly find that you have hundreds of photos to store and track. Although MSN Photos does not offer photo hosting for online auction photos, several other sites offer storage services. For a list of sites that offer hosting services, go to the auction site and search for a Help topic on submitting auction photos.

If you feel overwhelmed by the thought of overstuffed closets, attics, or garages, consider how easy it is to sell the items on the auction sites. With a little luck and some good pictures, you can be only days away from clutter-free closets and a few extra dollars.

The Fast Track to Better Photos

No time to study the fine points of photography? One or more of a few fast-track ideas can net noticeable results in your photos. In this example, strong color can make a big visual impact.

If you're one of the millions of overscheduled, overwrought people who loves photography but barely has time to read your mail, much less time to read tomes of technical information on the fine points of photography, take heart. You can make an appreciable improvement in your photos with one or more simple techniques that don't require lots of reading or memorization.

The ideas in this article are abbreviated for easy use. If you find a topic you particularly enjoy, be sure to explore more on the subject in photography books, magazines, and, of course, on MSN Photos.

1. Look for the light

When the subject of light is brought up, people expect to hear about the advantages of taking pictures in the early morning or at sunset. Those times of day typically offer stunning light. However, you can take good photographs at any time of the day because "looking for the light" means seeing unique compositions that are created by the way light illuminates a scene and subject.

Practice noticing how light can play on objects. Light often creates patterns such as in this photo where the eye is lead to a vanishing point by the light canopy, artificial lights, and the lighter areas on the floor.

Tip If you're using a digital camera, take the meter reading on the highlights in the scene and take the picture using that exposure. If you're using film, take a meter reading on a shadow area, and take the picture using that exposure.

In this photo, the photographer looked for light in an otherwise shaded scene. At the last minute, the photographer saw the thin shaft of light falling across the musician's straw hat. The direction of the light conveniently provided a subtle path leading to the musician's face.

2. Look for color

If you want to make a visual impact, look for bold color and make it the primary element of your photo. Further, use color with intent in your photos. All you need is a little background in color basics.

The three primary colors are red, yellow, and blue. These are saturated, dominant colors that make a big visual statement. A brilliant blue sky makes a great backdrop for pictures.

Secondary colors are green, orange, and violet. Tertiary colors fall between the primary and secondary colors. For example, yellow-orange falls between yellow and orange, blue-violet falls between blue and violet, and so on.

To create eye-stopping photos, use complementary colors. Complementary colors are opposite each other in the color wheel, such as red/green, blue/orange, and yellow/violet. When you place complementary colors next to each other, they make each other appear brighter. And because these colors are equal in value, combining complementary colors creates strong color contrast.

Bright, dominant colors, in this case red and blue, not only create visual appeal, they also create their own composition.

Given that color has strong appeal, you might think that a photo with *many* strong colors would create a more powerful photograph. That's not usually the case, however. A photograph with many strong colors can be distracting, drawing the viewer's eye from one color to the next. Instead, compose the photo so that one color dominates, and then use the dominant color to help organize the photo and focus attention.

Related colors are next to each other on the color wheel, the term "analogous colors" refers to a series of three or four adjacent colors. Related and analogous colors create harmony and are often used to lend a sense of atmosphere.

Colors can set or enhance the mood or atmosphere of an image and make objects appear to advance or recede in the image. Colors such as red, orange, yellow, red-violet, and yellow-green are warm and inviting, and they come forward visually. Conversely, violet, blue, and green are cool colors and they tend to recede visually. Color intensity can also complement the subject. For instance, pastel colors suggest tranquility; bright colors suggest activity, and dark, shadowy colors suggest a somber tone.

As you probably know, light at different times of the day has different temperatures, or colors. For example, the early evening hours produce a much warmer color of light (3,000 to 4,500 degrees Kelvin) than midday sun (5,500 to 7,000 degrees Kelvin), and artificial light (a 100-watt incandescent bulb is 2,900 degrees Kelvin) creates even different color variations. You can use the color variations of light creatively to enhance your images.

Tip To get saturated details in foliage or in a rich blue sky, and to help reduce bright highlights when photographing into the light, use a polarizing filter. To balance the bluish color found when taking pictures in open shade, try using a warm-up filter such as an 82A or B. If you're shooting with a digital camera, you'll get the best color by setting the white balance to match the light in the scene.

3. Just don't say "cheese"

If there is a universal photo convention, it must be having photo subjects say "cheese" to get them to smile for a picture. While smiling is a good thing to have subjects do for, say, a family portrait, almost all adults and children past the age of crawling have perfected a "cheesy" camera smile that satisfies the photographer but that lists far to right of genuine.

If you photograph people, try not to ask them to smile. Instead, photograph them with natural expressions. Emphasizing "natural," of course, means that you'll need to spend some time putting them at ease first.

Tip Natural expressions are fleeting. If you're not prepared to shoot and you say "wait, don't move," your subject may become self-conscious trying to hold an expression or pose. Instead, just shoot whether you're ready or not, and keep shooting as you make the necessary camera adjustments. It's much easier to delete a bad digital picture or throw away a film print than it is to recapture spontaneity and keep the subject engaged.

4. Avoid clichés

Cliché means a trite or overused expression or idea and, in this case, a "been-there-seen-that" photo. This means you have to ditch the "I-want-to-take-a-picture-just-like-that" mentality and break new visual ground both in the way you look at scenes and in the way you use your photo gear.

Take the obvious picture, if you must, but don't put the camera away. It's often only with time and patience that you discover different ways to "see" the subject or scene. Walk around, think about how to put the scene or subject in a more meaningful or interesting visual context for the viewer of the photo.

Certainly your camera gear gives you a world of creative options for going beyond the obvious. Develop your own cliché meter. If you see a picture and think, "this looks just like...", then look again and ask yourself how you could express the scene from a new point of view.

5. Do it with style

If you slavishly follow all the rules and guidelines for making good pictures, you will doubtless end up with lots of nice photos. If, however, you want something that sets your photos apart from others, you should find and fine-tune your personal style. Like your voice, your photographic style will make your images immediately recognizable by those familiar with your work. For anyone unfamiliar with your work, your personal style will distinguish your images from those of other photographers.

While style admittedly is difficult to explain, it is perhaps the one characteristic that ultimately pays the biggest dividends.

Developing a personal style is one of those things that is easier to write about than it is to create. Style can be what you specialize in, your characteristic approach to any subject, an element that you include in virtually every image, a guideline you consistently and successfully break, a personal point of view, humor, juxtapositions, a penchant for extreme simplicity, a passion for a subject, or a stylized darkroom treatment.

Each suggestion in this article could easily merit its own article. However, if you have limited time, any of these ideas should provide a jump-start to make noticeable and positive changes in your photographs.

Photo Ops in the Most Unusual Places

Alleys and other worthwhile detours

Hidden from the incessant human need to clean up, alleys provide surprising photo opportunities.

Are you bored going to the same places, taking the same monotonous pictures? If you are, then it's time to swerve off the beaten path and explore some unlikely places and events that offer photo opportunities. Weekends are a great time to take detours, because detours often take you out of the mainstream crush and give you space to do some creative exploration and photography.

If you plan to detour at random, be sure to pack your camera bag with a full complement of gear. Often the lighting and space you have to work in will be as unconventional as the location. At a minimum, pack a speedlight, a tripod or monopod, and a full focal range of lenses.

Alley art

Beautiful things can happen in alleys. Those narrow, dark, less-traveled passageways provide a studio in which Nature finds asylum from the incessant human need to clean up. And left to her own devices, Nature often draws exquisite three-dimensional vignettes on canvases woven by time. Wherever Nature works undisturbed, there are bound to be photo opportunities.

On an overcast day in a dim alley, a flash added the extra light needed to make the faded colors pop in this picture.

But why risk life and camera gear to schlep down dark alleys? Why not go to a park or nature preserve? The difference between photographing in alleys and, say, a meadow or woodland, is the unique juxtaposition of man and nature. In alleys, nature works on abandoned structures and objects to create photo opportunities that are far less predictable than you'd get taking photographs in an arboretum or park.

More often than not, however, nature does not work alone in alleys. For aspiring artists, alley walls provide expansive and affordable canvases. And predictably, alleys have that "underground" appeal that nourishes the iconoclast's creative expression. It's a sort of 21st century twist on Michelangelo's Sistine Chapel that today's impassioned artists spend quiet, tireless predawn hours transforming dingy brick walls into memorable and photogenic compositions. And if you're fortunate enough to find an alley where nature, artists, and impassioned idealists have been very busy expressing themselves, consider your detour to be a real find.

Location tips and notes Exercise caution and good judgment when entering alleys and other potentially unsafe locations. If you choose to photograph the location, stay alert to activity around you, and always have your mobile phone handy.

Shooting tips and notes Because the lighting is often poor in alleys and other out-of-the-way locations, use either your tripod or flash to ensure sharpness. If you're using film, choose a high-speed film. In fact, this is the perfect time to try out some of the new 1600 ISO films. Consider either using black-and-white film or switching to black-and-white mode on your digital camera.

Because the rusty gate provided enough context, the picture could have a tighter framing to isolate the most interesting elements of this scene.

Think like a photo editor who wants to tell a story in three or four succinct images. This means you'll want to look both for the detail and the overall context the scene provides. Before you take the picture, ask what you want the photo to tell viewers. If the telling aspect of the scene is the contrast of the overall location with the art or object, use a wider perspective that includes the surroundings in context. Then look closely for arresting details that can complete the story, for example, a single broken door knob overgrown with vines, a cat in the window, or a stray, discarded object that tells of former lives and activity.

Image-editing suggestions Once you have your favorite images on the computer, experiment with converting color images to black-and-white or sepia tone. Some images seem to be made for this type of treatment. Always make a copy of the original picture first, and save it in a lossless format, such as TIFF. Edit the copy—never on the original image. In addition, try splitting images into sections to emphasize depth or repetition of shape or pattern, or to simulate a panoramic perspective.

Relics and old stuff

Cities and towns choose to keep old stuff in both predictable and unpredictable places. For example, old farm implements might be unceremoniously parked in parking lots or abandoned cars by the roadside. Look for those places and think of them as opportunities to create photos reminiscent of bygone eras.

A predictably great place to find relics is in antique shops. Abandoned farms, run-down gasoline stations, and historical sites are usually good choices. But always ask permission before you photograph in any store or on anyone's private property.

Strong side lighting from a nearby window created the warm atmosphere in this image.

Once you find the location, spend a few minutes walking around thinking: think about the time and place associated with the object, who might have owned it, and how the object was used, what made it special or prized. Then look for ways to translate your imaginings about the object into the image. Antique stores often group objects from approximately the same period together. Consider using nearby objects to convey a sense of time and context.

Tips and notes The light you use to photograph antiques and relics can help convey the sense of antiquity and enhance the atmosphere you're trying to create. You will likely have three lighting choices: flash, natural light, or available (outdoor sunlight, or indoor tungsten or fluorescent) light.

If you're shooting indoors and you decide to use a flash, be sure to use a bounce flash. Direct flash almost always creates a harsh effect, along with deep shadows. Also, if you're shooting indoors, natural window light (if it is available) is the best option. Try to shoot using side light—the light falls on the subject from one side. If you choose to use available indoor light, be sure you use your tripod to ensure sharpness. In tungsten light, the warm tint often helps create the atmosphere you want.

Outdoors, consider using your flash to fill in shadow areas and avoid dull, faded colors.

In almost every case, you'll want to move in close to the subject to isolate it from its surroundings. Try to frame the pictures carefully to avoid cropping later.

Whether you're photographing alley art or antiques, veering off well-traveled roads almost always provides nice rewards—including honing your eye for unexpected photo opportunities, and adding some unexpected and interesting photos to your collection.

Fall Photos: Sharpen Your Eye for Color and Composition

Limiting the number of colors and keeping the composition simple can help make fall photos more vibrant.

As fall inevitably creeps across the summer landscape, it brings color changes vibrant enough to motivate even the most languid photo buffs into recording at least a few frames of nature's brilliant displays.

"Yeah, right," you say, yawning, "that's what we need—yet more sweeping landscape pictures of red, yellow, and orange trees."

Granted, anyone who's been through more than a few autumns knows that, given the stunning show nature provides, colorful, postcard-like landscape pictures are easy to take. If you're thinking "been there, done that," then it's time to think about fall as an opportunity to develop your eye for color and composition. If you want fall images that resonate beyond the predictable landscape pictures, then you'll have to get creative and use fall color in less predictable ways.

Look for details within the scene.

Color contrast

To go beyond the obvious ho-hum tree-changed-color picture, learn to use color contrast to its maximum potential. You can choose to use high or low color contrast, but use both with intent. High color contrast is achieved by using complementary colors in a composition. By definition, colors are complementary if they form gray when combined in equal amounts. On a color wheel, complementary colors are opposite each other. So the primary colors of light—red, blue, and green—have complementary colors: cyan, yellow, and magenta, respectively.

Using the complementary colors together creates images with striking contrast or "pop." This picture pops because it uses the complementary red-cyan colors. The same picture against green foliage in the background would have much lower contrast, and would become one of those nice, put-it-in-the-back-of-the-drawer pictures.

On the other hand, images with low color contrast use either a single color or colors in the same family in the composition. Using low color or harmonizing contrast creatively and intentionally creates visually soothing, tranquil images. For example, a macro image in which the frame is filled with a single fall blooming plant or berry is a low-contrast image, as is a frame filled with billowy grayish-white fall clouds, or distant multihued blue mountain ranges.

For low-contrast images to be effective, it's important to have a strong focal point in the composition, and to look for or create tonal differences that provide depth and definition. For example, if you're shooting a single-color subject, create or emphasize tonal differences by using side lighting and by playing up shadows.

Color and light

Many typical fall photographs are taken in bright or moderately bright sunlight. This type of light produces images that closely match the way we remember seeing the scene. That is part of the reason we respond to them with a positive sense of familiarity.

However, fall colors photographed in the cooler range of light at twilight or in overcast conditions, or in the warmer light of sunrise and sunset, offer a new perspective on familiar colors and subjects, and provide a more creative backdrop for photographs. Overcast and post-rain conditions, in particular, produce richer, more saturated colors. For example, the same red leaves photographed against a twilight backdrop create a more moody interpretation that suggests a sense of mystery or drama.

Fading afternoon light provides just enough frontal lighting for the leaves.

Color and composition

Looking at the spectacular array of fall colors, it's often difficult to isolate elements for a composition. And that's where some fall pictures fail. As a textbook rule, using more than two bright colors in a composition creates visual confusion. (Okay, so no one tipped off Mother Nature to this rule.)

While grand, panoramic pictures of colorful scenes may seem obligatory for fall photo collections, images can be much more effective if you choose a single color as the focal point. Of course, this approach requires more time and study amid the multitude of colors. If the single color is not immediately obvious, walk around the area for a while to study the colors and shapes. Soon, you'll be able to identify the most striking and interesting aspects of the scene that you can then use as the primary compositional element in the image.

As you study a scene, progressively focus on the smaller details: Look for "designs within the design." These smaller designs or arrangements are microcosms of the overall scene, and they can provide endless photo opportunities. As you walk around, remember that when you emphasize color as a focal point, the overall composition should be simple. Find an area or subject where you can eliminate competing and distracting elements from the composition by zooming in (and, consequently, compressing perspective), reducing depth of field by choosing a wider aperture (a smaller f-number), or changing your position.

The repetition of red in this photo helps unify the composition.

After you have a good sense of the composition you want, experiment with different angles, focal lengths, and positions until you find the framing and perspective that is most effective. Then, as you settle on a final composition, observe how the primary color is distributed or repeated throughout the entire frame. Try to find an angle and framing that allows color repetition to become the unifying element in the composition.

Also, remember to try vertical formats. Because cameras are easier to hold in a horizontal position, it's easy to overlook the possibilities offered by a vertical composition.

Last composition checklist

Before you take the picture, look at everything within the frame again. Then ask yourself a series of questions.

- What more can you do to emphasize the textures, lines, and form of the subject? For example, if the day is overcast, can you use a fill flash or an off-camera side flash to enhance the texture and create depth?
- Is the frame filled? Or is there dead space that will be distracting, or competing elements that add nothing to the image?

- Does what you see in the viewfinder communicate the message you want to share with viewers?

This series of questions should provide enough of a pause to keep you clear of the "predictable" fall photo rut.

A fill flash provided critical highlights in this picture.

Additional shooting and technical tips

In addition to color and composition, standard shooting tips apply. Following are a few to keep in mind.

- **Pick the right film** Choose a film that is known for reproducing rich and saturated colors. If you prefer to use transparency film, many photographers swear by Fujichrome Velvia for its sharpness and vivid color rendition. Kodak Ektachrome E-100S is also a favorite. When shooting with transparency film, exposure latitude is tight, so be sure to bracket your exposures. If you shoot negative film, many recommend Kodak Royal Gold and Kodak's VC-rated negative films rated at ISO 50 or 100.
- **Make adjustments for digital** Choose a slow (low) ISO value to minimize noise (the appearance of "grain") and to ensure sharpness and color saturation. Also, always set the white balance to match the conditions. For example, if you're shooting in shade or overcast light, set the white balance accordingly.
- **Take advantage of filters** To eliminate reflections from water and glass, saturate colors, and cut through haze, use a polarizing filter. For landscapes with a bright sky and much darker terrain, use a graduated density filter to bring the sky exposure closer to the exposure of the terrain. Try an enhancing filter to increase the intensity of reds and yellows in a scene. Enhancing filters, unlike polarizing filters, cause an overall warm color shift throughout the scene. Try an 81A, 81B, or 81C warming filter to enhance warm fall colors and to counteract the blue tint of overcast or shaded lighting conditions.

- **Provide depth, scale, and distance** For landscape pictures, include one or more elements that provide a sense of depth, scale, or distance. This may be as simple as including a rock in the foreground or a pine cone next to a seasonal cluster of berries.
- **Maximize depth of field** To maximize depth of field especially in landscape photographs, choose the smallest aperture (larger f-number) possible and focus one-third of the way into the scene.
- **Make red work for you** Red is a visually dominant color. If you include red in a photograph, use it with intention to enhance the composition and draw the viewer's eye. If red is used unintentionally, it will, of course, draw the viewer's eye from the focal point.
- **Know the message** Know why you're taking a picture. If you can verbalize what's compelling about the scene, chances are much better that you can communicate that message to the viewer.
- **Carry a card for quick backgrounds** Carry a gray card or any neutral-color card in your camera bag that you can use as a backdrop for macro pictures.
- **Meter with polarizing filters** If you use a polarizing filter to enhance color, be sure to take a meter reading from a midtone within the scene, such as green foliage or grass. Then use that meter reading as the exposure for the picture. This can help avoid possible overexposure due to the polarizer.
- **Add foreground elements** When you take photographs in the warm light of sunrise or sunset, try including shadowy foreground elements. The contrast of the cooler, bluish illumination of the foreground increases the contrast to the warm colors of the sky.
- **Carry foul-weather gear** If you decide to shoot in changeable fall weather, be sure to carry foul-weather protection for you and your camera.
- **Be creative** Try multiple-exposure images, turn the camera at an unconventional angle, use a fast film, or crank up the ISO on a digital camera and shoot in low light to create images with coarse grain or noise. Then try adding a soft-focus or warm-up filter.

The most important tip

Before you go out, think about what autumn means to you. Knowing what you think—how you feel—is as important as the camera and gear you use and how much you know about photography. Why? What you think translates directly into what and how you take pictures. And, ultimately, what you think is what will be the key that sets this series of fall photographs apart from "yet more sweeping landscape pictures of red, yellow, and orange trees."

Digital Image Editing 101

Careful correction can make the difference between an image being a throwaway or a keeper.

Taking the picture is half of the fun of photography. The other half is in the digital darkroom—getting that great finished image that you can't wait to show off to everyone who's willing to look at it. "Yeah, right," you say, "but I'm not Ansel Adams, and I know nothing about editing pictures."

While digital image editing often mirrors traditional "wet" darkroom picture processing, you don't have to have traditional darkroom experience to perform everything from minor fixes to minor miracles in a short time with digital images. In many cases, you can save pictures you would have otherwise thrown away.

That's "many," not "all" cases. Regardless of the small miracles you can perform, there will be some images that no amount of computer editing will fix. Image-editing software is good, but, alas, far from perfect. For example, if the detail is blown out of highlight areas, no amount of editing will put detail into those areas. You can use a cloning tool to paint in detail from a similar area, but the process is tricky, tedious, and the results can look artificial.

Tone and color adjustments made this image a standout for color and contrast.

If you follow good darkroom process and practices, however, you'll get more keepers than you think possible. And, what's more, you can polish those exceptional images into a portfolio of "personal best" pictures that you'll be proud to share and print.

Before you start editing pictures

The first two steps in image editing occur before you sit down at the computer. Be sure to:

- Learn your camera gear inside and out.
- Use your camera correctly when you take pictures.

Regardless of how much fun image editing is, you don't want to spend time on the computer correcting something that could have been corrected when the picture was taken. Make sure that you use your image-editing time to perfect and polish good pictures rather than salvaging images discolored because the white balance, ISO, or mode was incorrectly set.

Another important point is to know where you're headed and why you're going there. In other words, what does a well-corrected picture look like? The following list provides some of the basics for correcting photos. Not every item in the list will apply to every picture, and, of course, there will be exceptions in which many of the guidelines should be ignored.

- Good contrast. In black-and-white photos, this usually means white whites and black blacks, and a good tonal range of grays. In a color photo that has no whites or blacks, the goal is to have strong, vibrant color in the darkest areas and bright vibrant color in the lightest areas.
- Vibrant or realistic colors with no excessive color casts caused by improper settings for white balance or not using a color correction filter on film.
- Detail in both the shadows and highlights, or in the area (either highlight or shadow) that is most important to the image overall.
- Natural skin tones.
- Cropping that enhances the composition.
- An appropriate sharpening level.

This picture has many of the elements you look for when editing images: a good tonal range, vivid colors, white whites, black blacks, and detail in the shadow areas.

The image correction process

For those new to image editing, the process of image correction generally follows a sequence of adjustments that build upon each other. Following this sequence often makes subsequent steps easier to complete, and it will help avoid time-consuming mistakes that result in artificial-looking pictures.

A simple example is sharpening. In image-editing software, sharpening doesn't magically fix blurry focus. Instead, it makes existing focus appear sharper by increasing the contrast of adjacent pixels in areas where there are significant color changes, such as the edges.

Sharpening sounds like a good starting point for image editing, right? Not so. If you sharpen an image, and then make other adjustments such as burning (darkening an area) or dodging (lightening an area), the subsequent editing can create unnatural-looking edges and pronounced halo effects around objects in the picture.

Following a sequence or workflow in the digital darkroom not only helps you avoid time-consuming mistakes, but also ensures that you work with a copy of the image in as high a resolution as you can for as long as you can before making the final edits such as cropping or resizing for printing.

Image correction process

1. Save and correct a copy of the original.
2. Adjust the tonal range.
3. Adjust the color balance.
4. Dodge and burn.
5. Correct flaws such as dust, scratches, and red eyes.
6. Crop the image.
7. Size the image for printing, e-mail, and the Web.
8. Sharpen the image.

1 Save and correct a copy of the original. Before editing an image, always save a copy of the original file in a lossless file format such as Tagged Image File Format (TIFF or .tif) and work on the copy. Although you might have taken the image in JPEG format, do not edit and continue to save the image in JPEG format. JPEG files are small because they are compressed to save space on the memory card and on your computer's hard drive. However, during compression, some of the image data is discarded.

If you're working on a JPEG image and you periodically save it as a JPEG as you work, the image will be recompressed, and bits of the image will be discarded each time you save the file. While you may not notice image degradation on the screen, the more you save a JPEG, the more its resolution will decline.

Also, keep your untouched original images, in whatever format you took or scanned them, in a separate folder. That way you can always go back to the original if image correction doesn't go the way you want.

Note If you plan to use layers to make adjustments on your picture, you'll probably want to save the image in the image-editing program's native file format. For example, Digital Image uses the .png file format. Saving in the image-editing program's format preserves the layers so you can make adjustments later.

In this version, the picture's visual impact is diminished by the wide-angle view.

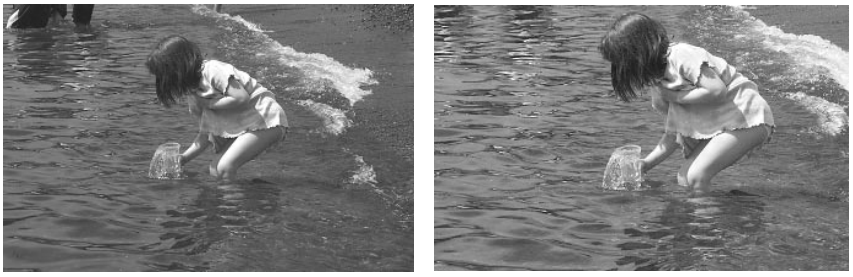
2 Adjust the tonal range. The tonal range of an image is the distribution from light to dark pixels within the image. In an average exposure, the tonal distribution will have a fairly even distribution of dark, midtone, and light pixels. You adjust the tonal range of the picture to get the sharpest detail throughout the image.

Most image-editing programs offer automatic and manual tonal-level adjustment tools. Using the automatic option, the program typically chooses the lightest and darkest pixels and distributes the midtone pixels proportionally. This is a generalized approach to tonal adjustment, and it usually works best on images that have average tonal ranges. However, on overexposed or underexposed images, automatic tonal correction can not only overdarken or overlighten pictures, but it can also introduce unwanted color shifts or tints.

Cropping the picture focuses the viewer's attention on the boy watching the fountain.

First try the automatic tonal adjustment. In Digital Image, click **Levels Auto Fix** or **Exposure Auto Fix** on the **Touchup** menu. If the automatic adjustment isn't what you want, then adjust the tonal levels manually in the **Exposure and Lighting** task by adjusting the sliders for **Shadows**, **Midtones**, and **Highlights**.

Tip Try the automatic levels and color adjustments first, because they can save time in processing images. If you don't like the results, you can undo the changes and make the adjustments manually.



This original image was too dark overall. Adjusting the tonal range brings out the details and makes a more acceptable image.

Another good starting point for tonal adjustment is to set the white point and black point. Setting the white point maps the lightest pixels in the image to white and setting the black point maps the darkest pixels to black. Digital Image adjusts the intermediate levels proportionally, giving your picture a better tonal range.

In Digital Image, you set the white point by clicking **Exposure and Lighting** on the Touchup menu. Then click the white point dropper and click a place in the photo that is white. Repeat the process with the black point slider. If there is no white in the picture, click the **Exposure auto fix** button.

3 Adjust color balance. In most image-editing programs, making a single color adjustment will affect all of the colors in the image. With a color wheel, you can predict how a color adjustment will affect the other color in the picture. Also, you can increase the amount of a color by decreasing the amount of the opposite color on the color wheel, and vice versa. For example, to decrease a reddish cast in a picture, try increasing the amount of green. To make the sky more blue, decrease yellow, its opposite color.

Setting the white point was the starting point for making tonal corrections to this image. Be sure to click the lightest white in the picture when you set the white point.

For general purposes, remember that the opposite of red is cyan (green/blue), the opposite of green is magenta (bright pink), and the opposite of blue is yellow. Typically, very small adjustments can make a big difference. Watch the picture to see how the adjustment is affecting the entire image as you work.

Depending on the image-editing program that you use, there can be one or many ways to adjust color balance. In Digital Image, the easiest way to change the overall color balance is by using Color and Saturation.

Tip The color and saturation tools are especially useful in restoring faded colors in old family photographs you've scanned.

4 Dodge and burn. In traditional, or "wet," darkrooms, standard image finishing includes darkening specific small areas of the image by increasing exposure (burning in) or lightening other small areas by reducing exposure (dodging). Burning in areas often reveals more detail or de-emphasizes less important or distracting areas. Conversely, dodging can reveal details in overly dark shadow areas.

In Digital Image, on the **Touchup** menu, click **Other Photo Repair**, and then click **Dodge and Burn Brush**. Try using the **Soft edge** option and increase the **Brightness** level to lighten (dodge) deep shadows. Use the same method, but with an increased contrast level, to darken (burn in) the lightest areas.

In this image, dodging and burning minimized distracting reflections that appeared in the man's sunglasses.

Regardless of which tools you use, it's a good idea to start with a low-intensity setting and to choose a brush size that is smaller than the object you're working on. Also, know that you can always click **Reset** to immediately undo any changes you make.

5 Correct flaws. Scratches, dust, and lens flare are only a few of the many flaws you can fix in an electronic darkroom. Some of these errors can be corrected automatically. However, if you're willing to take the time, many such errors are better corrected by hand.

The cluttered background is distracting. It draws the viewer's attention away from the subject.

One of the best tools for fixing flaws by hand is the cloning tool. It allows you to paint one part of the picture into another part of the picture, or paint from one picture to another. For example, you can paint over unwanted elements such as light poles, or add elements such as trees or people.

To use cloning, on the **Touchup** menu, click **Clone brush**. Select the brush size you want, and then click the starting area, or the area you want to paint into another part of the picture. Each time you want to begin using a different starting area, make sure to click **Set new start position**.

Tip When you use a cloning tool, take care to produce natural-looking results. Use short paint strokes and click a new starting position often. When you repeat the same starting point multiple times within an image, you are likely to create a very artificial-looking pattern.

Other guidelines include matching the angle of light and the proportions for cloned and original objects. In other words, don't paint a shrub from a shadowed area into a bright area of the image, and don't clone a foreground area into smaller background shrubbery.

Crop and size the image

6 Crop the image. The advantage of cropping is that you can discard portions of the image that you don't want or that do not contribute to the image. You can also center attention on the subject. The disadvantage of cropping is that it reduces the overall size (and, therefore, the resolution) of the image, and limits how much you can enlarge the image for printing. For this reason, it is always best to do as much cropping as possible in the camera as you take the picture.

This picture is cropped and featured the clone tool to remove background distractions.

For example, if you crop out a third of an overall image, the resulting image may not have a high enough resolution to print larger than 5" x 7". To order an 8" x 10" enlargement, the image must be at least 1536 x 1024 pixels. And it follows that to get a poster-size enlargement, it's a good idea to avoid cropping the original image at all.

7 Size the image for printing, e-mail, and the Web. Assuming that by now you have a flawless version of a picture, you can make copies of the final image and size each copy for the medium in which you want to print or display it.

The following table provides the minimum image dimensions needed for each print size available from MSN Photos.

Print size (inches)	Min. width (pixels)	Min. height (pixels)
4 x 6	800	600
5 x 7	1050	750
8 x 10	1536	1024
11 x 14	1750	1375
16 x 20 (poster)	2500	2000
18 x 24 (poster)	2500	2000
24 x 36 (poster)	2500	2000
30 x 40 (poster)	2500	2000
36 x 48 (poster)	2500	2000

For use in e-mail or on the Web The size you choose for images displayed on a computer screen is determined by the size, settings, and resolution of the monitors on which the image will be viewed (unlike for images you are printing). It is important to make sure that the pixel dimensions of your image are no larger than absolutely necessary for comfortable viewing. If you make a file larger than necessary, you might experience slow download times or rejection by the receiving e-mail server.

People can change the resolution of their monitors regardless of the size of their monitors. However, for best readability of text, monitors most likely are set at a given resolution based on the size of the monitor. For example, monitors in the 12-inch to 14-inch range generally display 640 pixels horizontally and 480 vertically (640 × 480). Fifteen-inch to 17-inch monitors are generally set to 800 × 600 pixels. Nineteen-inch monitors generally display 1024 × 768 pixels. Larger monitors can display different numbers of pixels, such as 1280 × 1024 pixels.

If you have a Web site, and you size an image as 640 × 480 pixels, the image will fill the screen of a 13-inch monitor. Likewise, it will fill the screen of a 15-inch monitor that is set at 640 × 480; however, the pixels—and therefore the image—will appear to be larger on the 15-inch monitor than on the 13-inch monitor. But if the 15-inch monitor is set at 1024 × 768 pixels, the pixels that make up the image—and therefore the image itself—will appear smaller.

Today, Web designers generally plan for a screen size of 800 × 600 pixels, which works for most monitors.

To size an image for online display, make a copy of the finished image, and then change the size of the copied image to fit the screen. Set a size that will display the image without crowding out the browser controls or the rest of the Web page elements. For example, to size a picture to fit one-fourth of the total screen area of a 13-inch monitor set to 640 × 480 pixels, set the size at 320 pixels wide.

Also remember that older computer monitors have a resolution of only 72 dots per inch (dpi) while newer monitors have a resolution of 96 dpi. So again, a high-resolution image does not necessarily mean a higher viewing quality on computer monitors.

To size images for e-mail messages, the same principles apply. But remember that some e-mail services set a maximum limit on the size of embedded or attached files. The larger the picture, the larger the file size. As a general guideline, you can size images between 325 and 400 pixels wide, at medium to low compression, to have an acceptably sharp image and size within an e-mail message.

8 Sharpen the image. In many image-editing programs, sharpening increases the contrast of pixels around the edges of objects to increase the image definition or sharpness. You must be very careful not to overdo sharpening. Oversharpening produces a white or light-colored "halo" along highly contrasting edges, resulting in a look that is harsh and unnatural. Since tasks, such as cloning objects into an image, affect the edges in the final image, sharpening is best done as a last step. More important, the original sharpness of an image is likely to diminish when the image is resized because the program has to "guess" at which pixels to add or delete. So it's best to sharpen the image after all the retouching and scaling have been done.

An unsharpened image.

Sharpening improves the image.

Also, the results of sharpening can vary between printed images and screen display. Experiment with your image-editing program to see what amount of sharpening works best for printed images and on-screen images. If you are going to print or output the same image to different destinations, make sure the sharpened image is a copy of the original that has been scaled to the final output size. Remember, never sharpen the original image.

How a histogram can help

If your scanner or digital camera offers the option of viewing an image's histogram (a snapshot of the tonal range of an image), you can see whether the image has enough detail in a given area to make computer corrections. The y (or vertical) axis of the histogram shows the number of pixels assigned to any given brightness value. The histogram shows shadow (darkest) pixels on the left, midtones in the middle, and highlight (lightest) pixels on the right. The x (horizontal) axis shows the distribution of pixels from dark to light throughout the image.

A high-key, or light, image will have the highest level of pixels on the right. A low-key, or dark, image will concentrate pixels toward the left. An average-key image will have the highest values toward the middle of the histogram. As you take pictures, check the histogram to make sure that you have a large area of detail and good distribution across the range to make corrections later.

If your picture does not have a good tonal range, you'll generally want to edit the image to distribute the tones as evenly as possible for the type of image you're working with.

Final advice

By using these processes, you should be well on your way to getting sparkling images that you'll be proud to share and print. Keep in mind that you can overdo adjustments and make the final image look unnatural. When making adjustments, try to remember the original scene, and then match your image to the colors and tonal range you remember. The first pictures you correct will be the most time consuming, but as you gain experience, you'll find you spend less time at the computer and more time taking great pictures.

12-month calendars 91
24-bit vs. 32-bit color 177

A

action photography 148
adding
  flash features 48
  keywords 110
  pictures to Digital Image Library 108
adjust levels. *See* levels and curves
adjust levels tool 73
Adobe Photoshop files 16
aging pictures with color effects 67
ambient light 179
antique effects 67
antistatic products 167
aperture 140, 187, 190, 193
  affecting depth of field 251
  maximizing depth of field 253
  reducing 251
aperture priority mode 141
archival paper and inks 102
Archive Pictures Wizard 119
archiving pictures 119
artifacts 129
artwork effect 66
aspect ratio 152
auction site photos 230
AutoCAD files 16
automatic bit depth conversions 168
automatic camera modes
  action 148
  burst 150
  macro 147
  overview 146
  panoramic 152
  portrait 151
automatic Digital Image setup 3
automatic document feeders (ADFs) 165
automatic dust and scratch removal 166
automatic exposure 138, 155
automatic flash 134
automatic media detections 13
automatic object flattening 58
auto fixes
  camera phone 79

B

backing up pictures 119
backlighting 49, 136
balancing colors 40
batch editing 79, 121
batch file management 121
batch scanning 171
battery life 133, 228
bit depth 168
black and white, changing to 67
blemishes, removing 46
blending brush 71
blown highlights 224
blue values 178
blurry. *See* focus, sharpening
BMP files 16
borders, adding 85
bracketing 139, 160
brightness. *See* exposure and lighting
  correcting 39, 73
  dynamic range 170
  monitor adjustments 178
brightness and contrast. *See* exposure and lighting
brushes
  blending 71
  clone 70
  distortion 72
  freehand 68
  rubber stamp effects 68
buffers 150
burst mode 150

C

calendars 91
calibrating monitors 175
cameras
  action shots 148
  automatic modes 146
  battery life 133
  burst modes 150
  close-up shots 147
  compatibility 13
  compression 129
  digital 126, 220
  file formats 130
  flash 134
  manual settings 137
  opening pictures from 14, 17
  overview 125
  panoramic 152
  photography tips 154, 215, 236
  portraits 151
  removable media 132
  resolution 127
  self-timers 153
  winter photo sessions 228
  zoom 131
camera phone auto fix 79
candid shots 218
cards, greeting 89
cataloging pictures. *See* Digital Image Library
CDs
  archiving pictures 119
  importing to Digital Image Library 108
  opening pictures from 14
  recommendations 132
  scanning images to 166
centering screen viewable area 176
circles 60
cleaning images 167
cleaning scanners 167
close-up photography 147
cold temperature photo sessions 228
color 145
  complementary 248
  contrasts 248
  emphasizing as focal point 251
  enhancing filters 252
  including red in photos 253
  polarizing filters 252
  primary 248
  shooting single-color subjects 249
colored casts 40, 145
colored pencil filter 66
colors
  antique 67
  applying color effects 67

black and white 67
blending 71
digital camera tips 221
gradient color sampling 70
Magic Wand 63
mats 86
monitor calibrations 178
monitor quality settings 176
photography tips 238
red eye 41
scanning 168
tint adjustments 40
white balance 40, 145, 221
color and saturation 145
color depth 168
color management, printer 101
combining objects 56
CompactFlash card 132
compatibility, automatic detection 13
composites 53
composition 43, 200
checklist 251
techniques 251
compressed air 167
compressing files 129, 172
contaminants, glass plate 167
contrast
ambient light 179
correcting 39
monitor adjustments 178
controls, monitor 178
converting bit depth 168
converting file formats 121
copying original versions 95
copying picture features
blending brush 71
clone brush 70
Edge Finder 62
copyrights 21
CorelDraw files 16
creativity, evaluating 205
cropping pictures 43, 60
curves 73
customizing picture viewing 112
cutting picture features 62

D

D-range 170
dark pixels 48, 73
dates
grouping pictures by 116
viewing pictures by 113
daylight 136
default color quality setting 177
default photo editor 120
depth of field 140, 190
maximizing 253
reducing 251
detecting compatible media 13
device compatibility 13
Diffuse Glow filter 151
digital cameras
action shots 148
automatic modes 146
battery life 133
blown highlights 224
burst mode 150
close-ups 147
colors 221
compression 129
file formats 130
flash 134, 226
focus 222
manual settings 137
opening pictures from 14, 17
overview 126
panoramic 152
photography tips 154, 220
portraits 151
removable media 132
repetitive patterns 227
resolution 127, 225
self-timers 153
sensitivity setting 144, 185
zoom 131
Digital Image
file formats supported 16, 96, 130
installing 3
Digital Image Library
adding pictures 108
archiving pictures 119
editing information 117
editing pictures 120
folders 113
grouping pictures 116
keywords 110, 112
labels 110
opening 107
overview 107
photo editors 120
Preview pane 117
printing pictures 100
Thumbnail pane 115
viewing pictures 112, 113
digital photo card readers 14
digital zoom 131
display adapters 175, 177, 178
distortion brush 72
dpi (dots per inch) 168
drawing (artwork) effect 66
drivers 101
dust 46, 166
DVDs
importing to Digital Image Library 108
opening pictures from 14
dynamic range 170

E

e-mailed pictures 98, 168
edge effects 85
Edge Finder 62
editing pictures
blending 71
brightness 39
contrast 39
cropping 43
distorting 72

erasing 45
gradient colors 70
histograms 73
image-editing programs 234
Mini Lab 79, 121
opening 13
photo editor 120
red eye 41
textures 70
tint 40
touchup tools 39
workspace area 175
editing picture information 117
emboss filter 66
EMF files 16
enhanced resolution feature 131
enlargements, ordering 103
enlarging picture features 72
EPS files 16
erasing picture features 45
evaluating photo quality 198
EV setting 160
expanding screen viewable area 176
exposure 39
bracketing 252
meter readings 253
multiple 253
exposures 48, 137, 155, 193, 201
exposure and lighting 39
exposure compensation 139, 155, 160
eye redness 41, 135

F

f-stops 140, 187, 190, 193
facial expressions 240
facial touch ups 47, 70, 151
fade-resistant paper 102
file browser 14
file compression 129
file formats supported 16, 96, 130
file format conversions 121
file management options 121
file size 127
file transfers
archiving 119
importing 13
fill flash 136, 251
films 252
film cameras
action shots 148
aperture 140, 187
automatic exposure 138
automatic modes 146
burst mode 150
close-ups 147
exposure 137
exposure compensation 139
ISO setting 144, 185
overview 137
panoramic 152
photography tips 154
portraits 151
self-timers 153
shutter speeds 142, 191
white balance 145
film protection in cold weather 228
film scanners 166
film speeds 144, 185
filter-enhanced pictures 66
filtering lighting colors 40
filtering pictures by
dates 113
folders 113
keywords 112
thumbnails 115
filters 252
Fix Red Eye tool 41
flags 117
flash 41, 48, 134, 226
FlashPix files 16
flatbed scanners
cleaning 167
opening pictures from 18
overview 165
flattened PNG files 97
flattening objects 58
flat opaque objects, scanning 165
Flipbook animations 150
floppy disks 14, 132
focus, sharpening 201, 222
folders
grouping pictures by 116
viewing pictures by 113
fold styles, card 89
formats supported 16, 96, 130
format conversions 121
foul-weather protection 253
FPX files 16
frames, adding 86
freehand brush 68
freehand tool 61

G

GIF files 16
glossy paper 102
gradient color sampling 70
graininess 144
graphical control screens 178
gray card 253
green values 178
greeting cards 89
grouping objects 57
grouping pictures 116

H

half-fold cards 89
hand-created artwork effect 66
hard drive, opening pictures from 14
hiding screen items 116
high-color quality settings 176
high-contrast images 248
high-quality printer settings 101
highlighted edges 85
highlights 73
high resolution pictures 101
high resolution scanning 168
histograms 73
historical information. *See* Digital Image Library
holiday cards 89
Home Publishing files 16
hot spots 226

I

ideas, discovering photography 211
identifying pictures 110
image-editing programs 234
images
  high-contrast 248
  low-contrast 248, 249
  multiple-exposure 253
image cleaning tips 167
image sensors 128, 144, 193
importing pictures 13, 108
incandescent lights 40
information, picture. *See* Digital Image Library
ink drying time 178
Installation Wizard 4
installing Digital Image 3
interpolation 131
invitations, personalized 89
irregular shapes 61
ISO setting 144, 185

J

JPEG files 16, 58, 96, 127, 172

K

keywords
  grouping pictures by 116
  overview 110
  viewing pictures by 112
Keyword Painter 111
Kodak Photo CD files 16

L

landscapes 252, 253
larger print sizes 101
large picture scanning 169
LCDs 161
lenses, cold weather and 228
levels 73
levels and curves 73
library. *See* Digital Image Library
light
  side lighting 249
lighting 39
  adjust levels tool 73
  ambient 179
  aperture 140, 187
  automatic exposure 138
  backlighting 49
  blown highlights 224
  bracketing 139, 160
  colors 40
  dark area adjustments 48
  evaluating 203
  exposure compensation 139
  film speed 144, 185
  flash 134, 226
  incandescent 40
  overview 137
  photography tips 236
  problems 39
  red eye 41, 135
  room conditions 179
  shutter speed 142, 191
  tips 157, 193, 224
  white balance 40, 145, 221
light pixels 49, 73
linking objects 56
locating pictures
  Digital Image Library 107
  file browser 14
  overview 13
  TWAIN support 17
  WIA support 17
locations, selecting photography 211
locked objects 54
long exposure shots 153
lossless compression 129
loss prevention 119
low-color quality settings 176
low-contrast images 248, 249
low-quality printer settings 101
low resolution pictures 101
low resolution scanning 168
LZW compression 172

M

Macintosh PICT files 16
macro
  pictures 253
  shots 253
macro mode 147
Magic Wand 63
manual camera settings
  aperture 140, 187
  automatic exposure 138
  exposure 137
  exposure compensation 139
  ISO setting 144, 185
  overview 137
  shutter speeds 142, 191
  water glass analogy 138
  white balance 145
manual Digital Image setup 3
manual Import Pictures Wizard starts 14
marquee tool 60
mats, adding 86
maximizing depth of field 253
maximum print sizes 127
media, storage 13, 132
memory cards or sticks 132, 225
memory considerations 168
meter reading 253
microdrives 132
Micrografx Designer files 16
middle gray 138
miniature storage cards 132
Mini Lab 79, 121
MIX files 16
moire 227
monitors
  24-bit vs. 32-bit color 177
  ambient light 179
  brightness 178
  calibrating 175
  color quality settings 176
  contrast 178
  overview 175
  preserving settings 179

resolution 175
RGB values 178
month, viewing pictures by 113
mosaic effect 66
motion photography 148
moving picture features 55
MSN Photos Web site 103
multimedia cards 132
multiple
keywords 111
objects edited 57
objects flattened 58
objects selected 56
pages scanned 165
pictures edited 79, 121
pictures printed 100
pictures selected 117
pictures taken in succession 150
picture versions 95
multiple-exposure 253
My Pictures folder 108

N

naming batches 121
naming pictures 110
natural facial expressions 240
natural light 40
negatives, scanning 165, 170
noise 144, 252, 253
number of pixels 127

O

objects
combining 56
consistently colored areas 63
displaying separately 53
Edge Finder 62
flattening 58
freehand tool 61
grouping 57
handles 55
locked 54
marquee tool 60
moving 55
multiple selected 56
overview 53
preserving layers 58
object tool 55
odd-sized pictures, mats for 86
one-month calendars 91
one-week calendars 91
online auction photos 230
online print and gift ordering 103
opaque objects, scanning 165
opening pictures
cameras 17
file browser 14
overview 13
photo editor 120
scanners 18
troubleshooting 18
TWAIN support 17
WIA support 17
optical zoom 131
ordering prints and gifts 103
organizing pictures. *See* Digital Image Library
outdoor photo sessions 211, 215, 228
outside edges, photo 85
overcast conditions 250, 251, 252
overexposure 137
overriding automatic exposure setting 139

P

painting (artwork) effect 66
painting pictures
blending 71
distorting 72
freehand 68
gradient color sampling 70
rubber stamp effects 68
texture sampling 70
panorama 152
panoramic photography 152
panoramic stitch 152
paper options 102
PCD files 16
PCX files 16
PC Paintbrush files 16
permanent object links 58
personalized cards 89
photographic prints, scanning 165
photography basics 184, 215, 236
photography subjects and locations 211
photo card readers 14
photo editors 120
photo paper options 102
photo projects 89
photo quality
aperture 140, 187
automatic camera modes 146
automatic exposure 138
compression 129
evaluation checklist 198
exposure 137, 155, 193
exposure compensation 139, 155
file formats 130
film speed 144, 185
flash 134
lighting 193
long exposures 153
manual camera settings 137
overview 125
red eye 41, 135
resolution 127
self-timers 153
shadows 136
shutter speeds 142, 191
storage media 132
story telling 203
tips 154
water glass analogy 138
white balance 145
zoom 131
PHP files 16
pictures
archiving 119

color effects 67
editing 120
filter-enhanced 66
formats supported 16, 96, 130
grouping 116
identifying 110
importing 13
opening 13
ordering prints and gifts 103
organizing 107
scanning 165
viewing 112
pixels
cropping 43
histograms 73
interpolation 131
noise 144
overview 126
print sizes 101
resolution 127, 168
scanning 166
playback mode 224
PNG files 16
PNG Plus files 58, 96
portrait photography 85, 151
positioning camera and subjects 154
precise editing
blending 71
distorting 72
gradient color sampling 70
texture sampling 70
preserving monitor settings 179
preserving object groups 57
preserving object layers 58
previewing scanned images 172
printers
color management 101
drivers 101
quality settings 101
printing pictures
alignment on page 99
cropping 43
maximum sizes 127
multiple images 100
paper options 102
quality settings 101
resolution 127
single image 99
size 101
Digital Image 100
prints, ordering 103
projects, creating photo 89
proportional cropping 43
proportional resizing 55
PSD files 16

Q

quality ranges, printer 101
quarter-fold cards 89

R

RAM 168
ratings, grouping by 116
real life photography 213
rechargeable batteries 133
rectangles 60
reducing photo size 129
red eye 41, 135
red values 178
reinstalling Digital Image 6
reminders, archive interval 119
removable media 132
removing
blemishes 46
Digital Image 6
picture features 62
scanner dust and scratches 166
spots 46
wrinkles 47
renaming batches 121
reordering objects 53
repetitive patterns 227
resizing
batches 121
Digital Image workspace 175
picture cropping 43
picture features 55
thumbnails 114
resolution
adjusting 175
cropping 43
digital cameras 225
e-mail quality 98
optimal 170
overview 127, 168
print size 101
recommendations 172
scanners 165
Web quality 98
RGB values 178
room lighting conditions 179
rotating picture features 55
rubber stamp effects 68
rule of thirds 43, 158

S

safety precautions, photography 228
sampling picture features
blending brush 71
clone brush 70
saturation 145
saving pictures 95
scanners
automatic enhancing 172
batching 171
bit depth 168
cleaning 167
dynamic range 170
film 166

flatbed 165
large pictures 169
multi-page scanning 165
opening pictures from 18
optimizing performance 172
overview 165
preparing pictures for 167
previewing image 172
purchasing 170
resolution 168, 170
speed 171
TIFF format 172
types 165
USB 170
scratch removal 166
screen settings
ambient light 179
brightness 178
color adjustments 178
color settings 176
contrast 178
overview 175
preserving settings 179
resolution 175
RGB values 178
viewable area adjustments 176
selection tools
Edge Finder 62
freehand 61
Magic Wand 63
marquee 60
object 55
overview 59
self-timer features 153
sending prints or gifts 103
sensitivity camera setting 144, 185
sepia tones 67
series, photo 150
setting
white balance 252
shadows 73, 136
sharpening pictures 66
sharp prints 101
showing screen items 116
shrinking picture features 72
shrinking picture to show edge 85
shutter lag 148
shutter priority mode 143
shutter speeds 142, 191
side lighting 249
single picture printing 99
size
batches 121
Digital Image workspace 175
e-mails 98
file compression 129
flattened PNG files 97
odd-sized pictures, mats for 86
picture cropping 43
picture features 55
prints 101, 127
storage media 132
thumbnails 114
skewing picture features 72
skin touch ups 47, 70, 151
slides, scanning 165, 170
SLR (single-lens reflex) cameras 137
smaller print sizes 101
small aperture 140, 188
SmartMedia card 132
Smart Erase tool 45
smearing picture features 72
snapshots, scanning 165
soft edge effect 85
special effects
colors 67
filters 66
freehand 68
stamps 68
speeds, scanner 171
splotchy color 129
spots, removing 46
Stack 53
stained glass filter 66
stamps, painting with 68
static electricity 167
still life photography 213
stitch 152
storage media 13, 132
storing information. *See* Digital Image Library
story telling with photography 203
stretching picture features 55
subjects, selecting photography 211
sunlight 136
sunsets 253

T

table of contents 116
temperature changes, cameras and 228
temporary object links 56
texture sampling 70
TGA files 16
thumbnails
objects 53
resizing 114
viewing options 115
Thumbnail pane
grouping pictures 116
hiding/showing items 116
view options 115
Preview pane 117
thumbnail slider 114
TIF files 16, 96
tiles view 115
time
archive intervals 119
monitor calibrations 178
shutter lags 148
viewing pictures by 113

tint adjustments 40
toolsets. *See* color and saturation or exposure and lighting
touchup tools 39
tracking information. *See* Digital Image Library
transferring files
  archiving 119
  importing 13
transparency adapters 165
tripod substitutes 153
TWAIN 17
two-dimensional scanning 165

U

underexposure 137
ungrouping objects 57
unlocking objects 54
unprintable card areas 89
upgrading Digital Image 5
USB connectivity 170
USB Mass Storage Class devices 14

V

vertical formats 251
video adapters 175, 177, 178
viewable area, screen 176
viewing pictures by
  dates 113
  folders 113
  keywords 112
  overview 112
  thumbnails 115
viewing picture information 117
viewing thumbnails 115
virtual drives 14

W

water glass analogy 138
weatherproofing camera gear 228
Web quality resolutions 98, 168
weight ranges, paper 102
Welcome to Digital Image Suite Library window 108
white balance 40, 145, 221, 252
WIA 17
wide aperture 140, 188
Windows Bitmap files 16
Windows Metafile files 16
winter photo sessions 228
wizards
  Archive Pictures 119
  Import Pictures 13
  Installation 4
workspace area 175
wrinkles, removing 47

Y

year, viewing pictures by 113

Z

zoom 131, 229
zoom lens 251